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ABSTRACT

This experimental curriculum bulletin provides an overview of all subject areas with a specific focus on basic skills and knowledge. Its purpose is to provide administrators, teachers, parents, and other members of the educational community with access to a comprehensive resource that identifies the body of knowledge and skills to be taught for each grade level. The bulletin begins with a broad overview of each subject area. Statements of the philosophy, goals, and guidelines for bilingual education and career education are included. English as a second language and foreign languages in the elementary school are treated by levels. The reading component identifies and describes the important skill areas needed for a developmental reading program. Specialized subjects for the intermediate or junior high school are presented course by course. All other curriculum subjects within a grade level are grouped together. (Author/RLV)

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EXPERIMENTAL CURRICULUM BULLETIN
LIMITED DISTRIBUTION

MINIMUM TEACHING ESSENTIALS

SCOPE & SEQUENCE

GRADES
K-9

BOARD OF EDUCATION OF THE CITY OF NEW YORK
DIVISION OF EDUCATIONAL PLANNING AND SUPPORT

UD020028

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EDUCATIONAL PLANNING AND SUPPORT

FOREWORD

The Chancellor's Message to Staff earlier this year, and the Statement of Target Goals for 1977-1978, issued jointly by the President of the Board of Education and the Chancellor, had a single theme. Both stressed the urgent need for a renewed effort on the part of all professional staff to ensure that every child in the New York City public school system be guaranteed, at the very least, a grasp of the minimum essentials of the curriculum areas in each grade. For many of our children, learning is a challenging and stimulating experience that leads to further exploration, achievement and growth. For every child, the school must provide a working grasp of the fundamental concepts, skills and knowledge in each subject area on every grade level.

Effective teaching is the vital element in the process of learning. Responsible supervision is integral to successful teaching. Cooperative planning, grade-wide and school-wide, scrupulously honest assessment, and effective evaluation, including grade-wide and district-wide testing at regular intervals, must all be incorporated into a successful teaching-learning program.

There is great latitude for creative and innovative teaching, but Minimum Teaching Essentials: Scope and Sequence K-9 has been designed as a guide and an official check-list for the standard curriculum. While every teacher is free to deepen, extend and enrich the curriculum to meet the needs and the potential of all the children in the schools, this bulletin forms the base of the standard curriculum which should be included in daily lesson planning.

Irving Anker

IRVING ANKER
Chancellor

ACKNOWLEDGMENTS

This experimental edition, Minimum Teaching Essentials: Scope and Sequence K-9, was prepared at the request of Chancellor Irving Anker of the Board of Education of the City of New York. Arnold Webb, executive director of the Division of Educational Planning and Support, was responsible for directing and administering this major project involving many staff members of the New York City School system.

Grateful appreciation is extended to the unit head and staff of the Curriculum Policy and Planning Unit for their dedication in coordinating the contributions of the various Centers and reviewing, revising, and preparing the final manuscript.

A special debt of gratitude is acknowledged to all the directors and staff of the Centers of the Division of Educational Planning and Support: Humanities and the Arts; Mathematics and Science; Library, Media and Telecommunications; School Development; Health and Physical Education; Career and Occupational Education; Bilingual Education; and Reading. Without their support, cooperation, and expertise, this document would not have been possible.

Special thanks is given to the Dissemination Unit head and staff for the production and distribution of this publication.

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INTRODUCTION

This experimental curriculum bulletin, Minimum Teaching Essentials: Scope and Sequence K-9, provides an overview of all subject areas with a specific focus on basic skills and knowledge. It should be noted that this publication does not include statements concerning teacher methodology, student attitudes and appreciations, or moral and ethical values. Previously published bulletins provide the necessary support to help educators design and implement a complete and appropriate curriculum. Administrators, teachers, parents, and other members of the educational community will now have access to a comprehensive resource which identifies the body of knowledge and skills to be taught for each grade or level.

The organization of this bulletin begins with a broad perspective of each subject area as taught in our schools today. These statements highlight the major components of the individual disciplines and indicate the role each area plays in the total educational process. Statements of the philosophy, goals, and guidelines for bilingual and career education are included.

English as a second language and foreign languages in the elementary school (FLES) are treated by levels and precede the subjects which are grouped by grade. The reading component identifies and describes the important skills areas needed for a developmental reading program. Specialized subjects for the intermediate or junior high school are presented course by course. These are: foreign languages, home economics, industrial arts, and typewriting.

All other curriculum subjects within a grade level are grouped together, i.e., for the third grade the order is art, English, health education, library-media, music, physical education, science, and social studies. Each page presents content area and/or topics with descriptors for specific skills and knowledge. References for suggested classroom implementation are keyed to existing bulletins where relevant. Bulletin titles are found on the first page of subject areas for each grade.

Suggested time allotments offer guidance for the span or percentage of time for the topic within the subject area.

A child development focus appears preceding K-2, 3-5, and 6-9 grade groupings. This section reviews children's basic psychological needs, and the physical, socio-emotional, and intellectual growth patterns expected of a particular age group.

This experimental bulletin represents a major step in a comprehensive effort to delineate the essentials of a standard curriculum. The successful completion of this effort awaits your reactions and assistance.

Arnold Webb
Executive Director

OVERVIEWS OF CURRICULUM AREAS

ART

The scope and sequence for art is designed to stimulate exploratory and constructive activities by children through a series of related and continuous art experiences. These experiences involve children in the process of art-making, a process which encourages the development of perceptual and manipulative skills, the selection of various modes of expression, and the ability to make decisions. Based upon widely accepted principles of child development, this process requires a broad range of art opportunities in order that all children may find mastery and satisfaction in art.

BILINGUAL EDUCATION

One of the most fundamental and universally acceptable concepts in education is that an instructional program should utilize the student's already acquired language skills and thought processes as a basis for fostering intellectual development and mastery of the basic skills of communication and reasoning. This concept is equally valid for all pupils, and it is especially appropriate for students living within our society whose language and culture differ from our own. Educational success for linguistically different students is enhanced by permitting them to learn in their first language while they are learning to function successfully in English. Thus, they will have an opportunity to be better prepared to participate meaningfully within their new environment. The primary goals of a bilingual education program are excellence in both languages and the development of basic skills. The inherent validity of these goals make it clear that bilingual programs can be made available to all pupils within our system for the purpose of enriching their educational and life experiences. It is felt that this comprehensive approach will lead to the preparation of an individual that will be capable of leading a full and productive life, possessing the ability to adapt to new demands, opportunities, and values in a constantly changing world.

Bilingual education has been defined as the use of two languages as mediums of instruction for the same pupil population in a well-organized program which encompasses part or all of the regular curriculum and which includes the study of the history and culture associated with both languages. In the United States, of course, one of the two languages will be English. The bilingual program incorporates an interdisciplinary approach which includes all the required curriculum areas which are part of the traditional school program. Thus, for example, the mathematics' curriculum will include the same scope and sequence made available to other students, the only difference being the use of a language other than English as the vehicle for instruction.

ELEMENTS OF A BILINGUAL PROGRAM

Every bilingual program which sets the aforementioned goals and objectives should include the following elements:

PROVISION FOR THE REINFORCEMENT AND SEQUENTIAL DEVELOPMENT OF THE PUPIL'S DOMINANT LANGUAGE

It provides for language arts instruction in the pupil's native language in which the four language skills will be developed sequentially, e.g., listening, speaking, reading, and writing. Thus, we use the language in which the child has already acquired the sound system, basic structure, and vocabulary in the development of cognitive as well as other skills.

DEVELOPMENT OF THE ABILITY TO UNDERSTAND, SPEAK, READ, AND WRITE A SECOND LANGUAGE

The student begins immediately to learn the second language through the utilization of a sequentially based methodology in second language teaching. A typical English as a second language program will begin with an emphasis on aural and oral skills, and gradually reaches the stage where the student can advance to reading and writing.

PROVISION FOR SEQUENTIAL INSTRUCTION IN THE STUDENT'S NATIVE LANGUAGE IN THE CURRICULUM AREAS CONSISTENT WITH THE ESTABLISHED REQUIREMENTS FOR THE CITY'S SCHOOLS

Content areas which are considered to be critical to the intellectual and emotional development of students and to their success in the school environment are initially taught through the use of their first language, thereby permitting and encouraging them to enter and participate immediately in all classroom activities, and draw from previous experiences as bases for developing new ideas and concepts.

DEVELOPMENT, REINFORCEMENT, AND ENRICHMENT OF STUDENT'S APPRECIATION AND KNOWLEDGE OF THEIR OWN HISTORY AND CULTURE, AS WELL AS THE HISTORY AND CULTURE ASSOCIATED WITH THE SECOND LANGUAGE

The historical contributions and cultural characteristics identified with the people representing both linguistic communities are an integral part of the program. Relationships, similarities, and differences are presented in the social development of state, nation, and community in order to create an understanding and appreciation of each in a positive rather than a negative sense.

By providing the opportunities for successful participation and achievement, students are encouraged to develop acceptance of themselves and of others through social interaction.

CAREER EDUCATION

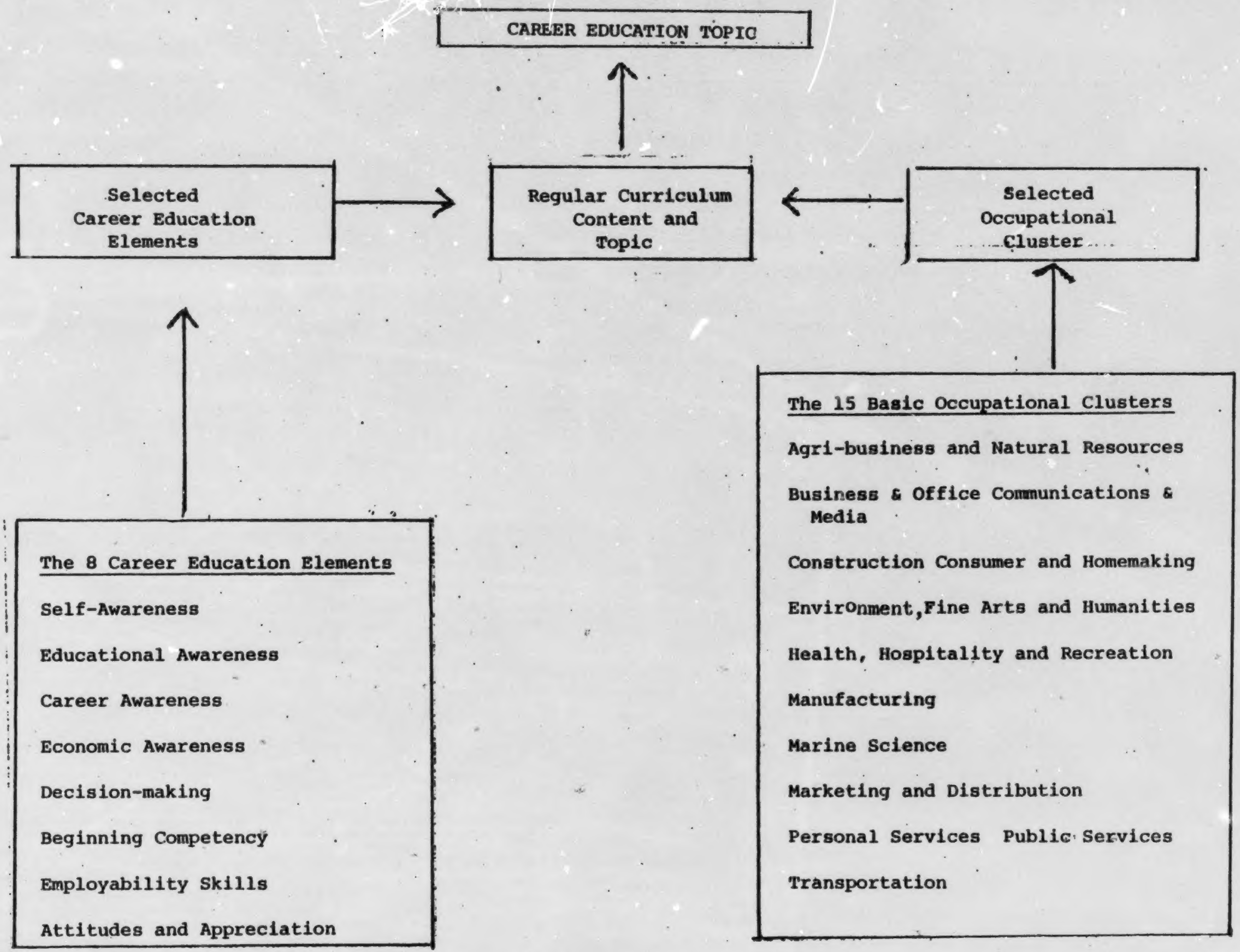
Career education is not a separate entity apart from other areas of the curriculum but rather an "orientation" of other curriculum areas, and is viewed as a dimension of all instruction. Career education consists of all experiences designed to link the needs of students to the world of work. These experiences range from career-infused instruction to on-the-job employment which may or may not carry academic credit. Career education as developed in New York City public schools is in accord with state and national policies.

The process of career education is generally divided into three levels of performance: awareness, exploration, and preparation. The attitudes and skills necessary for students to evaluate their own strengths, interests, and set priorities in career goals for themselves have been divided into eight career education elements. Thousands of jobs have been grouped in fifteen basic clusters to allow for systematic presentation of the information and exploration necessary for informed decision-making. An infusion of career education into the regular curriculum means that the teacher focuses on an element of career education such as self-awareness or decision-making, selects a job cluster which is relevant to a topic in the regular curriculum and interweaves all these elements.

In the fourth grade social studies, for example, students study the experiences of Columbus, Magellan, and Verrazzano. In recording such events, the topic of career awareness with reference to the variety of occupations in the world of work guides the teacher to incorporate into instruction the identification of the many occupations needed to operate a ship, e.g., captain, navigator, map makers, cook, helmsman, etc.

In this example, however, another component of career education has entered instruction. In addition to threading in the topic of career awareness, the teacher has also interwoven the transportation cluster. That is, the enumeration of occupations is basically skewed to occupations involved in the ship as a transportation tool. Had she or he so desired, the teacher could have utilized the health cluster which, regarding variety of occupations relevant to long-distance travel, includes occupations ranging from ship's doctor and nurse to health inspectors at the customs agencies through-out the world.

It is important to point out that each topic in the regular curriculum need not be infused. A diagram of the infusion process follows.


CAREER EDUCATION TOPIC
Selected Career Education Elements
Regular Curriculum Content and Topic
Selected Occupational Cluster
The 8 Career Education Elements
Self-Awareness
Educational Awareness
Career Awareness
Economic Awareness
Decision-making
Beginning Competency
Employability Skills
Attitudes and Appreciation
The 15 Basic Occupational Clusters
Agri-business and Natural Resources
Business & Office Communications & Media
Construction Consumer and Homemaking
Environment, Fine Arts and Humanities
Health, Hospitality and Recreation
Manufacturing
Marine Science
Marketing and Distribution
Personal Services Public Services
Transportation

INFUSION PROCESS

Career education is based on the developmental needs of students, requirements of disciplines, teacher's expert knowledge of instruction, and parental/community input and approval. Career education reflects awareness of, exploration in, and preparation for the world of work and provides a systematic approach to job families, or clusters of occupations. Career education is a comparatively newcomer to the field of education. To use these guidelines and overall design in developing the full array of career education learnings is the challenge of the future.

CAREER EDUCATION

ENGLISH LANGUAGE ARTS

The English Language Arts curriculum has as its goal the development of language power so that students may engage effectively in communication with others orally and in writing, react perceptively and humanely to the spoken and written word, and understand the effects of communication on thinking and behavior.

During the early primary years the language arts program develops basic skills of listening, speaking, reading, and writing. Children learn to decipher the code of the printed page relating words to the sounds and symbols, and comprehending meaning. Simultaneously they acquire skills of writing, both the process of penmanship and the art of composing words, sentences, phrases, and paragraphs, gaining increasing command of language and technical accuracy in spelling, vocabulary, grammar, variety of sentences, and organization of ideas.

In the middle grades the skills of listening, speaking, reading, and writing develop spirally acquiring greater complexity and maturity. Students gain greater facility in thought processes, listen more perceptively, read more difficult and more varied literature with greater understanding, and express themselves orally and in writing more fully and in greater depth.

During grades 7 through 9 the student moves higher on the ascending spiral as basic elements are reinforced and enriched at new levels. Students become acquainted with a wider body of literature including selections from the past and the present, familiar and foreign cultures, and a variety of literary genres and styles. Students are able to analyze and react more perceptively to the mass media: the newspaper and the periodical, the film, radio and TV. Students advance in their own communication, oral and written, toward clear expression, grasp of standard usage and attractive style. The ultimate purpose is to grow in human understanding, in sensitivity, in responsiveness, and in creativity.

HEALTH EDUCATION

With our increased attention to the current health issues of nutrition, environmental stress, drug and alcohol abuse, overpopulation, and the inequality of health care, the concern for the health of our children is perhaps greater today than ever before.

Health education of the school-age child supplements and reinforces efforts at home and in the community. This education for health represents a major challenge to our society - while the causes of many of today's health problems are known, and to a great extent preventable, we nevertheless find that children are unwilling or unable to make the proper choices for better health.

The emphasis in health education, therefore, must be in helping the pupil-learner make informed decisions about his or her health behavior. And to be successful in this regard, children should be personally involved in defining their own goals and actions, while guided by the parents and teachers toward evolving an acceptable means for achieving positive health behavior within their own framework of values, beliefs, and resources.

Such changes in behavior, to be long-lasting and practiced regularly, must be a personal decision. While there are many factors that enter into the decision-making process, our primary responsibility is in providing children with a body of knowledge as a starting point. The information contained in this publication is intended to assist in this learning process. Though it only provides the basic health learnings for the district schools, it should be noted that other curriculum resources are available to help the classroom teacher in planning creative approaches to the health instructional program.

Health education could have a significant role in the school curriculum if recognized as an important means for achieving general human understanding and improving the quality of life. With support from the school and community, these worthy goals could be realized.

Home Economics is an integral part of the school program. It aims to help boys and girls assume responsibilities as family members through sharing specific group experiences. Personal competencies are developed by mastering the skills of daily living. Manipulative skills are fundamental and involved with other learnings such as: nutrition, consumerism, decision making, ecology and the management of time, energy and money. Home Economics activities provide opportunities for pupils to apply skills learned in other curriculum areas. The Future Homemakers of America Clubs trains participating youth for leadership. Home economics career education provides opportunities for intermediate and junior high school students to explore specific related clusters of occupations through mass production, enterprise experiences and field observations.

HOME ECONOMICS

The following areas are included in home economics:

Foods and Home Experiences I
Foods and Home Experiences II
Foods and Home Experiences III

Clothing and Home Experiences I
Clothing and Home Experiences II
Clothing and Home Experiences III

Boutiquerie

Child Care

Career Exploration:

Orientation to the World of Work
Consumer Service Careers
Foods Careers
Clothing and Fashion Careers
Child Care Careers
Housing Careers
Interior Design Careers

Safety education is basic to every day living. Focus on safe procedures is inherent in each home economics lesson. Experiences in the home economics class enable pupils to apply safe and efficient practical techniques through hands on activities. Housekeeping routines include the use, proper storage and care of equipment and supplies. Pupils are constantly alerted to maintain a safe classroom environment. At the beginning of each home economics course there is basic safety instruction. Each pupil is tested and these records are kept on file. Appropriate safety instruction continues with immediate practical application in home economics lessons. The pupils are encouraged to apply safe practices and methods used in the home economics rooms to their own home situations. Each home economics room should contain the latest edition of the Board of Education's School Shop Safety Manual.

HOME ECONOMICS

Industrial arts is an essential phase of general education. It aims to provide boys and girls in the elementary and secondary schools with an opportunity to acquire an appreciation and fundamental understanding of the highly technical and industrial world in which we live. It also aims to provide exploratory and experimental laboratory experiences which prepare our youngsters to be more useful members of their homes and their communities, more appreciative and intelligent as consumers and more valuable as citizens. Industrial Arts Grades 7-8-9 details fully our aims and objectives.

INDUSTRIAL ARTS

Via the hands-on activities, the construction of functional projects, and the interdisciplinary approach inherent in all industrial arts programs, students become highly motivated and aware of careers and career opportunities about us. The teacher provides an on-going program of related information lessons, enterprise experience, and mass production activities creating an educated sensitivity towards occupational possibilities. Shop management is an intregal part of the program. Teachers should refer to Industrial Arts Shop Management for suggestions.
The following areas are included in this curriculum:

Wood
Metal
Plastics
Drafting
Ceramics
Aerospace
Publications
Photography
Graphic Arts
Plant Ecology
Driver Education
Career Education
Special Education
Marine Technology
Careers For Children
Small Engine Repair
Enterprise Experience
Electricity/Electronics
Career Awareness Program
Publishing Activity Centers
General Industries Laboratories
Transportation/Power Dynamics
Communication Activity Center
Elementary School Industrial Arts

INDUSTRIAL ARTS

Safety education is a vital and essential part of everyone's daily life. Continued emphasis on accepted shop safety procedures is encouraged in each of the industrial arts laboratories. Through exposure each student is able to develop safe working habits in his or her thinking, as in the skillful use of hand and power tools In addition, each student is engaged in pupil personnel management responsibilities, encouraging organization and respect for the tools and machines which play such an important part in our lives. Each shop should contain the latest edition of the Board of Education's School Shop Safety Manual.

LIBRARY-MEDIA

The library-media program is a service, instructional, and management system shaped by the school's philosophy, its learning objectives, the characteristics of the learners, the teachers' skills, the curriculum and the organization of the students for learning. Learners develop the ability to find, generate and apply information. The program provides:

- systematic introduction to creative media for children in books, films and recordings and instruction in creating, finding, analyzing and using information;
- consultation services in the use of media resources, equipment, and facilities for the improvement of instruction
- environments which foster the judicious use of media resources, both human and material
- production of materials created to meet specific needs of students and teachers.

The Center is a laboratory where the use of all resources is purposeful, planned and integrated with classroom teaching. Its use is intended to maximize the individualization of instruction.

It is important to understand that library-media is not a subject and therefore has no content per se. There are relatively few skills to be learned but their mastery requires repeated use in a variety of subject contexts. The four levels of development in the use of the library-media are sequentially:

- learning to use tools to locate materials
- learning to select material appropriate for the purpose and type of information needed
- learning various ways in which selected material can be used most effectively
- developing critical judgment in evaluating materials with regard to their suitability, accuracy, authenticity, bias, propaganda, etc.

Any relevant skills program must embody all four levels at each grade level. The key to the success of the program is the integration of the teaching of library skills with classroom instruction. Attempts to teach skills in isolation lead to student frustration and seriously impair the student's ability to use libraries independently and intelligently.

MATHEMATICS

The mathematics curriculum involves the development of ideas and skills, related to the areas of arithmetic, algebra, geometry, probability, logical thinking, and problem solving.

Beginning with collection of physical objects in the classroom, children move from non-verbalization to verbalization and symbolization. Operations are introduced with activities on sets of concrete objects. By exploration and play, children learn the number facts of arithmetic and the meaning of each operation in a concrete way.

At the same time that arithmetic concepts and skills are being developed, concepts from algebra and geometry are introduced. Children observe and later verbalize relations between numbers and their graphs on the number line. Fundamental operations with whole numbers, positive, negative, zero, and fractions and decimals are developed gradually. Experimentation and discovery are methods used to help children develop understanding of important properties of our number system.

Geometric concepts are introduced in kindergarten as well, starting with the recognition, naming, and discovering of properties of geometric figures both plane and solid. Non-metric and metric ideas are dealt with. By the end of the fourth grade, children have received a rich background of experiences in geometry as a foundation for intermediate and secondary school mathematics.

In the primary grades, pupils manipulate, arrange and work with objects and other physical materials to observe relationships that can be symbolized in mathematical terms. This mathematics laboratory program provides project-oriented activities for children to strengthen number and numeration concepts. Through the spiral approach to the structure of number systems and properties involved, children will come to have a greater facility, not only in computation, but in their understanding of the "whys" of the algorithms involved.

MATHEMATICS

Different ability levels are included in the materials so that students who are able can progress more rapidly and more deeply within enrichment topics, and students in need of remediation cover the major essentials of the course of study with more emphasis on arithmetic computational skills and applications.

Building on the foundations developed in earlier grades, concepts from algebra, geometry, graphical representations and their applications, probability and statistical applications receive continued emphasis and provide the background for the mathematics the student will meet in the upper grades.

In the intermediate and junior high school years, the scope of mathematics content is broadened to include more geometry, arithmetic, probability, and algebra. Students come to understand mathematics as a unified whole by perceiving interrelationships among concepts and areas of mathematics. They learn to apply the various branches of mathematics in the course of problem-solving experiences which are related to science, industry, employment and citizenship. They come to appreciate mathematics as an indispensable tool for living in our technological society.

MUSIC

One of the reasons for the growth of music education has been the recognition of the important role that music plays in the life of the child. Through musical experiences the child grows in self-understanding, self-awareness and self-expression. Music is an area of the curriculum that is concerned primarily with subjective responses and affective growth.

Music as a spectator activity is rapidly diminishing. Children want more out of music than simply to be a spectator on the side lines. They want to "do" music. They want to make music with their voices, on a drum, guitar, steel drum, recorder, clarinet or any musical instrument.

It is the responsibility of the school to provide children with the opportunity and the means to develop their innate musical powers to their utmost, so that they may be able to participate in, and join others in the making of music, to become aware of the musical contributions of all people, to share in the enormous wealth of world literature, to enrich and deepen their inner life.

Music education must reach out to meet the needs of all children, from the serious music student to the child who wants only to enjoy music. Those for whom music has become a source of personal satisfaction become living proofs of the value of good quality music education.

PHYSICAL EDUCATION

The primary goals of physical education are to provide children with regular, vigorous exercise, and to insure their continuing participation in the health and recreational benefits of such a program throughout their lives. As an example, the volume of evidence overwhelmingly supports the position that cardiac disease may be prevented by regular participation in daily energetic exercise of thirty minutes duration. Such habits must be started at an early age. If we demonstrate that prevention of disease is a real concern and we guarantee that all children participate in a daily period of physical education, then students will recognize the value of such a program.

A planned program of physical education also contributes to several goals of general education. Among these are: socialization in a guided setting, improved self-image as a result of improved individual performance, recognition for the athletic talents of gifted students via games and individual and team sports, and development of interests and activities for leisure time. In the early grades these aims are accomplished through games, song plays, and movement education. In later grades students progress to more complex activities. Many games and sports are based on tradition and folklore and are usually the outgrowth of play patterns of the past. Playing games and sports can thus allow for a more sympathetic understanding of human relationships and customs of the past.

Movement education is that aspect of physical education which focuses attention on performance of basic body movements, and manipulation skills. These can be practiced in isolation or incorporated in games and song plays in the early grades. They form the basis for the later, more complex sports and activities. For example, manipulation skills of bouncing and throwing, learned in the early grades, are developed in specific ways for the sport of basketball. Movement education also develops concepts of space, direction, shape, number and rhythm which are necessary for functioning in other areas, as well as in physical education.

PHYSICAL EDUCATION

Physical education activities are classified in the following major groups: individual, dual, and leisure time sports; team sports; combatives; physical fitness, conditioning and body mechanics; outdoor education; and dance.

All units of instruction based on physical education activities include the following skills and knowledge: history of the sport; safety precautions; selection and care of equipment; basic rules and scoring; officiating techniques; etiquette and courtesy (fair play, sportsmanship); and culminating activities (intra squad, intramural).

Recent legislation mandates that physical education classes be coeducational and that adaptive physical education be provided for students with disabilities or handicapping conditions.

The activities listed for skill development in the physical education section are varied and extensive to provide sufficient choice, since not all schools are able to provide all the activities that are listed. Facilities may be a critical factor. Clearly, a school without a swimming pool cannot teach swimming. However, principals and teachers are urged to explore available resources in their community to insure that all students are provided with equal opportunity for growth and development.

SCIENCE

In these times of great scientific advancement and opportunity, we are increasingly dependent upon a scientifically literate population. Our young people must be guided to explore, to discover, and to understand the scientific concepts which will be of value to people in a changing world. Science meets the needs of all pupils since it offers them endless opportunities to explore, to manipulate, and to discover as they strive to find the what, how, and why of the world around them. The pupil-oriented laboratory science program is designed to provide a variety of experiences in the form of laboratory investigations, demonstrations, trips, and projects which will appeal to all children of varying backgrounds and interests.

The design of the science program provides a set of basic experiences and instructions for which all pupils are responsible. Pupils are frequently exposed to familiar objects as a basis for study. New ideas, laboratory skills, and science vocabulary are introduced at a pace which permits easy assimilation. Understandings and interrelationships are constantly reinforced through frequent referral to previous studies. In addition, lessons and units contain concrete suggestions for stimulating a more in-depth study by providing extended enrichment studies for students whose interests and abilities warrant them.

The science content combines the two components of science instruction: process and knowledge. To accomplish this, the following approaches have been used in teachers' guides.

There has been a greater stress on the important concepts underlying each of the disciplines of physics, chemistry, biology, and earth science, and the interrelationships among them.

Laboratory investigations and experimentation have been integrated into the science lessons where student involvement would make the greatest impact. There has been a greater emphasis on critical thinking, investigation, and problem-solving as ways of learning.

SOCIAL STUDIES

The curriculum in history and the social sciences has been guided by several major considerations. These may be summarized as follows:

It emphasizes the teaching of concepts rather than the accumulation of data. The curriculum has been predicated on the same theory of learning that inspired recent changes in the teaching of science and matehmatics. Instruction should focus on the development of critical thinking. The student must learn to "think as a scholar"—to search out and deal with authentic source materials, to use techniques of inquiry and discovery, and finally, to arrive at conclusions supported by evidence.

It seeks to provide all students with the values, skills, understandings, and knowledge needed to cope with the pressing social problems of our age. We live in an era of change and challenge, a time when new and complex forces are reshaping our society. Students must recognize the sources of change and be prepared to deal effectively with issues raised by change. They must also strengthen their commitment to democratic values.

It attempts to incorporate basic concepts drawn from the disciplines of history and the social sciences. Each discipline offers a set of basic concepts variously known as "key ideas," understandings, or generalizations. These concepts provide a structure around which learning may be organized within each grade.

It attempts to develop skills and research techniques sequentially. The curriculum provides important tools for analysis and encourages the use of objective, rational methods in the study of contemporary problems.

It attempts to provide learning activities that aim at conceptualization through techniques of inquiry and discovery. Probing discussion questions, careful analysis of primary source materials, case studies of concrete social phenomena, the use of contrasting evidence to underscore man's varied social responses —these and other strategies are used to obtain pupil interest and to develop understandings.

No one method, however, is mandated. Children learn in many different ways. The learning process justifies a variety of techniques or strategies and a wide range of teaching materials.

SOCIAL STUDIES

It emphasizes the use of multi-media resources rather than the traditional textbook. Especially useful are the audiovisual materials of instruction--motion pictures, filmstrips, maps, globes, transparencies, 8 mm. single-concept films, programed instruction, records, tapes, pictures and other non-book resources.

TYPEWRITING - KEYBOARD MASTERY AND SKILL DEVELOPMENT - GRADES 7-9

The middle school typing program is designed primarily to enable pupils to develop touch typing skills. The application of these skills extends to typing classroom notes, preparing term papers, preparing book reports in acceptable form, documenting homework, and other personal uses. Another objective of the program, as prescribed by the official curriculum guide, is to supplement instruction in English language art skills with emphasis on spelling, punctuation, syllabication, paragraphing, and capitalization.

Ideally, typewriting should be offered four or five periods a week for two consecutive semesters. This sequence and frequency of instruction assure acquisition of automatic skills for most pupils. It is the experience of teachers and supervisors of typewriting that typewriting programs of fewer than four periods per week for two consecutive semesters is neither effective nor productive since in many cases the desired skill is not acquired.

Typewriting lesson aims are specific, but need not be identified on the chalkboard in the usual style; however, they must be reasonably attainable. Teacher demonstration is vital to almost every lesson in typing; the demonstration may be individualized at the student's desk or presented on the demonstration typewriter. Pupil typing, preferably of meaningful material, should be the overwhelmingly dominant activity; pupil efforts must be guided and purposefully executed.

SCOPE AND SEQUENCE

ENGLISH AS A SECOND LANGUAGE

ENGLISH AS A SECOND LANGUAGE

A successful method of teaching English to non-native speakers is through the audio-lingual approach. The pupils first contact with the language is listening. They next practice what they have heard by repetition of language patterns and a variety of oral drills. At later stages, reading and then writing are introduced. Grade level curriculum specifies reading and writing objectives to be mastered by native speakers. Teachers of English as a second language (ESL) should know these objectives to insure that non-native speakers will also achieve these competencies.

The content of the curriculum at any level will depend on several factors: the age of the pupils, the duration of the ESL program, and the second language ability of the students. There are usually three levels of instruction: beginning, intermediate, and advanced. Levels of instruction are necessary to insure that the language objectives are introduced in a systematic fashion. The reading, writing, and auditory objectives are also integrated into these divided levels and are arranged in a hierarchy of increasing difficulty. Teachers should review the scope and sequence in language arts K-9 in this bulletin to determine the specific skills and knowledges necessary for ESL students at various grade levels. Vocabulary will vary according to the sophistication and grade level of the ESL students. It is important to note that some students in grade level 6 may be beginning ESL students while others are intermediate or advanced.

A variety of topics must be mastered by all students. They include greetings, weather, emergency situations, etc. For example, students in all grade levels must master the patterns.
My name is____________________. I live at______________________.

The following ESL scope and sequence will outline the topics, skills, and knowledge that should be taught. For specific examples of lesson plans and methodology consult the Board of Education bulletins Handbook for Language Arts Pre-K-2 and Teaching English as a Second Language in the Middle Grades. Lessons in science, math, social studies and music may be found in the experimental bulletin Teaching English as a Second Language in The Elementary Schools.

BEGINNING ESL

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
STRUCTURAL ANALYSIS	
Articles	An and the as used preceding initial sounds, are introduced. An and a as used preceding consonant and vowel sounds, are introduced.
Nouns	Nouns can be singular or plural, e.g., bank/banks, boy/boys, glass/glasses. Some nouns are irregular, e.g., man/men; child/children.
Verbs	Am, is, are and regular verbs are used in the present tense. Was and were and regular ed verbs in all terminal sound categories, e.g., walked, played, wanted are past tense verbs. To be going to_____ is a future tense pattern.
Subject Pronouns	I, you, he, she, etc., replace common and proper nouns in subject positions.
Demonstratives	This/these and that/those, are used in declarative and interrogative sentences.
Object Pronouns	Me, him, her, it, them, us, you, replace common and proper nouns in object positions.
Possessive Adjectives	My, your, his, her, its, our, their, replace common and proper possessive singular and plural nouns in describing ownership.
Possessive Pronouns	Mine, yours, his, hers, its, our, theirs, replace common and proper possessive nouns.
Questions	Do and does are used to ask and answer yes/no questions. Who, what, when, and where are used in information questions with do, does, and to be.

BEGINNING ESL

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
STRUCTURAL ANALYSIS (continued)	
The Negative	The negative is formed with the auxiliaries do and does and the verb to be.
READING	
Alphabet	The same letters may have different sounds.
The Sentence	Sentences have a doer and a receiver. Sentences have meaning.
Paragraph	Paragraphs have main ideas and supporting ideas.
Punctuation	Certain marks of punctuation are essential to enhance better reading comprehension. The period (.) The comma (,) The question mark (?)
Vocabulary	Some words are similar in two languages. Student level and experience will determine the vocabulary taught.
AURAL ORAL *pp. 23-24	
Directions	Teacher directions to students are important.
Illustrations	Identification of a picture from an oral word, oral action, phrase, oral descriptive sentence, brief oral paragraph demonstrates listening comprehension.
Consonants	Identification of consonants and consonant blends in initial, medial and terminal positions from oral words demonstrates that students hear these sounds.
Vowels	Identification of vowels in initial, medial and terminal positions from oral words demonstrates that students hear these sounds.

*Teaching English as a Second Language in the Middle Grades

BEGINNING ESL

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
AURAL ORAL (continued)	
Sequencing	Listing the sequence of events from an oral paragraph demonstrates that there is logical sequence of action and events.
Sentence Completion	Identification of a phrase which best completes an unfinished oral statement demonstrates knowledge of syntax.
WRITING	In grades 1-2 manuscript writing (printing) of the alphabet, familiar names, basic vocabulary and in grades 3-6, cursive writing of alphabet, one-word vocabulary, phrases and sentences are motor skills. Single words, sentences controlled orally and read with comprehension with attention to left to right movement, punctuation, spacing, and letter forms are copying skills. Word, phrase, simple sentence writing of material controlled in oral production and the writing of dictated material within a students auditory comprehension ability are dictation skills. Periods or question marks are terminal punctuation. A sentence begins with a capital letter.
SPELLING	There is no definite spelling list. However, the students should be held responsible for the spelling of the words learned in class. An oral dictation of such words should be included in weekly tests. Consult specific grade spelling list.

INTERMEDIATE ESL

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
STRUCTURAL ANALYSIS	
Nouns	Nouns can be count or mass. They are often used with 'HOW MANY' and 'HOW MUCH; in both questions and statements. Proper, common and collective nouns are used in both questions and statements. Nouns can show possession, e.g., John's.
Verbs	Regular and irregular past-tense forms tell about past events and actions. Progressive (past and present) tenses use present participles. The modals: should, would, could, may, might, shall, will, etc., can alter the meaning of verbs.
Adjectives	Adjectives describe and compare nouns and pronouns, e.g., Simple, comparative - as...as, more...than, fewer...than, superlative - est, most...,
Prepositions	In, on, at, near, off, by, under, etc., commonly used in phrases.
Pronouns	Indefinite pronouns replace nouns, e.g. some; any; every; with - body and - one.
Adverbs	Some adverbs are adverbs of place, e.g., there, here, far, near. Some adverbs are adverbs of time, e.g., then, now, before, after.
Expletives	There is, there are, there was, there were are used in both statements and questions.
Negative	The negative is used in both statements and questions.
Questions	Did is used with question words, e.g., How much? How many? which and whose? Question words how, who, what, where, when, whose, and why are used with different tenses.

INTERMEDIATE ESL

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
READING	
Phonics	Use the same symbols that are used in Webster's dictionary to assist students in pronunciation.
Selections	All difficult or unfamiliar points of grammar should be taught as encountered in reading selections and the students should be expected to remember them. e.g., the difference between hanged and hung; dragged and drug, etc.
Punctuation	Certain marks of punctuation are essential in order to enhance better comprehension of reading selections. The period (.) The comma (,) - Example: The President, said the governor, had the right to veto the bill. The President said the governor had the right to veto the bill. Semi-colon (;) Quotation marks (") direct quotations Example: The "eye" saw the airplane through the clouds. (Eye is in quotes because it refers to radar, etc.)
Vocabulary	Development of vocabulary depends on the sophistication and experience of the students.
Comprehension (within time limits)	Culling information from reading selections under a time pressure.

INTERMEDIATE ESL

CONTENT AND AREA TOPIC	SKILLS AND KNOWLEDGE
WRITING	Commas are used to enhance meaning. Sentence and paragraph writing of student ideas, emotional reaction, and creativity are developed through experience charts and guided writing activities. Guided written responses to sequential, logical questions over a single topic create a written paragraph. Writing on a familiar topic which controlled orally by the teacher, assists students in generating written compositions.
AURAL-ORAL	Continue using the drilling procedures.
Sentence and Paragraph Completion	Identification of a phrase which best completes an unfinished oral statement, oral paragraph or oral story demonstrates comprehension of the statement, paragraph or story.

ADVANCED ESL

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
STRUCTURAL ANALYSIS	
Syntax	Statements and questions are patterns used with all verb tenses.
	Direct statements use quotation marks.
	Indirect statement with and without the use of "that" does not use quotations.
	"ing" subjects (e.g. Gerunds e.g., Running is fun.) are used as nouns.
	"To do" subjects (e.g. To do homework is necessary.) are used as nouns.
	Passive constructions, with and without an agent, give language variety.
	Present and past perfect tenses have special uses.
Grammar	Many verbs are changed to nouns by adding suffixes. e.g., happiness, worker, institution, etc.
	Reflexive pronouns refer back to the subject, e.g., He went himself.
	Some infinitives are not preceded by "to" e.g. They helped find the cat.
	Two-word verbs. Examples: to burn up, to use up, etc., are often idiomatic.
	Adverbs can modify nouns. Examples: The prices here are very good.
	Adjectives of size usually precede other descriptive adjectives. Example: My friend has a big brown cat.
	Multiple modifiers have specific order in a sentence. Example: He is a happy, smiling, excited child.
Vocabulary	Latin and Greek cognates and useful Americanisms encountered in reading selections are an important vocabulary focus.
READING COMPREHENSION (within time limits)	Culling information from reading selections under a time pressure.

ADVANCED ESL

CONTENT AREA AND TOPIC	- SKILLS AND KNOWLEDGE
Prefixes	Mis-, un-, sub-, re-, in, pre, etc.
Suffixes	Nent, ness, er, or, etc. -ful (full of) e.g., careful The suffixes - ence and -ance change verbs to nouns meaning "an action or state resulting from the verb." Examples: Verbs - prefer, differ, insure, disturb Nouns - preference, difference, insurance, disturbance The suffix -ive changes verbs to adjectives. create - creative express - expressive The suffix -al changes nouns to adjectives. profession - professional
Homophones	to, too, two; know, no; hour, our; blue, blew; would, wood; one, won; I, eye; I'll, aisle, isle; son, sun; ate, eight; cent, scent, sent; write, right, rite; they're, their, there; peace, piece, see, sea; guessed, guest; birth, berth; heel, heal; steel, steal; tail, tale; mail, male; foul, fowl
Common Abbreviations	Titles - Mr. -Mister; Mrs. -Misses; Dr. -Doctor; Prof. -Professor Weights and Measures: Ft. -foot, feet; in., ins. -inch, inches; yd., yds. -yard, yards; lb., lbs. -pound, pounds; oz., ozs. -ounce, ounces; qt., qts. -quart, quarts; gal., gals. -gallon, gallons; doz. -dozen; pt., pts. -pint, pints Time: A.D., B.C., A.M., P.M.: wk., wks. -week, weeks; mo., mos. -month, months; yr., yrs. -year, years; sec. -second; min. -minute; hr., hrs. -hour, hours Addresses: P.O. -post office; no., -number; dept. -department; apt., apts. -apartment, apartments; Ave. -avenue; St., -street; Blvd. -boulevard; Rd., -road; Dr. -drive Other: e.g. -for example; i.e. -that is; etc. -et cetera, and so on; M.D. -medical doctor; Co. -company
WRITING	Formal and informal letter writing is important in everyday life (greeting, ending, other mechanics). Conveying student's ideas, feelings in organized written form understandable to a reader is a free writing exercise.

ADVANCED ESL

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SPELLING	"Y" changes to "i" + (-es; -ed; -ment; -ness) Examples: happy/happiness; copy/copies; copy/copied; accompany/accompaniment Doubling of final consonants: Examples: drop/dropped; prefer/preferred Change -f/-fe to -ves Examples: half/halves; life/lives Words ending in silent "E" preceded by a consonant, drop the -"E" before a suffix that begins with a vowel (-ed, ing, -al, -ance, -er): Examples: give/giving, move/moved, moving, movable, mover Exceptions: Words ending in -ce or -ge keep the final -e before a or o. Examples: notice/noticeable, manage/manageable Words ending in silent "E" preceded by a consonant (-ful, -ly, -ment) Examples: taste/tasteful, love/lovely, move/movement Exception: judge/judgement

SCOPE AND SEQUENCE

FOREIGN LANGUAGE IN THE ELEMENTARY SCHOOL

(FLES)

FOREIGN LANGUAGES

The foreign language program of the New York City public schools encompasses a wide range of foreign language offerings, specifically Chinese, French, German, Modern Greek, Italian, Hebrew, Latin, Russian, Spanish, Swahili and Yiddish.

The emphasis in foreign language teaching is on communication. What is attempted is to teach language functionally from the very beginning and to develop the four basic language skills, namely the ability to speak with reasonable fluency, to understand a native speaker of the language, to comprehend the printed page and to write in the foreign language within reasonable limits. The skills are developed by means of maximum use of the foreign language in the classroom and a variety of activities, such as dialogues, role playing, dramatization, situation simulation, the use of electronic aids and many others.

Concurrent with language study there is also the attempt to understand the culture of the people whose language is studied from the point-of-view of both cultural achievements and everyday life, customs and values.

Basic to effective foreign language teaching is the recognition of individual differences, specifically differences in learning rate, learning styles, motivations, goals, interests and needs. Modifications in curricular content, activities and approaches are necessary to accommodate these differences.

FOREIGN LANGUAGES (FLES) - GRADES 3-4-5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LANGUAGE ACQUISITION IN FRENCH, GERMAN, HEBREW, ITALIAN, AND SPANISH	
Listening	New utterances are modeled so that sounds and sound patterns can be distinguished and a linkage between sound and meaning established. Commands, questions and answers, chain drills, dialogues, songs and taped material are used for ear training and comprehension of language patterns.
Speaking	The sound system of a language and proper pronunciation are acquired by means of imitation and mimicry concurrently with language patterns. Devices for habituation of language patterns are memorization, choral repetitions and drills. Freer manipulation of vocabulary and structures is facilitated by modification of dialogues, role playing and situation simulations. Oral activities are supported by visuals, flannel board cut-outs, transparencies and puppets.
Reading	Actual reading is preceded by a reading readiness stage during which objects in the classroom, pictures, maps and charts are labeled. Reading begins with language patterns mastered in the pre-reading stage. Reading progresses to new patterns.
Writing	Writing begins with the labeling of objects, pictures and charts during the pre-reading stage.

FOREIGN LANGUAGES (FLES) - GRADES 3-4-5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Writing is practiced by copying language patterns previously mastered, writing from dictation and making picture dictionaries.
Grammatical Structures	Model sentences show grammatical structures. Generalizations of grammatical structures are applied to new linguistic situations.
Cultural Information	The geography of the country where the language is spoken, the customs, holidays, school life, recreations and values of the people are topics of cultural information. Maps, pictures, transparencies, films, records and tapes are aids for conveying cultural information. A corner of the classroom is set aside as an exhibit area for pictures, scrapbooks and models.
Conversational Themes	The school, the classroom, the family, occupations, food and meals, going marketing, visiting the park or zoo, recreation and sports are conversational themes.

SCOPE AND SEQUENCE

READING

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READING

Comprehension is the ultimate goal of a total reading program. The development of comprehension is a highly individual process. Proficiency in comprehension, developed early in the elementary grades, is refined and extended throughout a student's school career.

Reading instruction is a part of the developmental process in which the learner progresses in a continuous fashion. Learning to read and becoming a proficient reader requires the development of language and of concepts which are based on prior knowledge and experiences. The development of proficiency in reading moves from understanding that written language is oral language in written form to the understanding that the written form carries information to the reader.

A developmental approach to reading includes providing continuous experiences for students as they learn to: (1) derive meaning; (2) unlock familiar words; (3) derive information from content area materials; and (4) develop flexible rates of reading for different purposes.

A diagnostic-prescriptive approach is a basis for determining students' needs, planning instructional strategies, and selecting appropriate materials. When a student has difficulty understanding written material, the teaching of specific skills becomes an essential part of the instructional program.

Reinforcement of skill learning is accomplished as the teacher plans reading activities using content area materials, newspapers, magazines, and other resources.

In addition, students should have ample time to read widely at their interest and ability levels. Building a lasting desire to read needs to be cultivated from pre-school through adulthood.

The skills component for developing reading proficiency has been divided into the following four major skill areas. These are: pre-reading skills; word power; comprehension; work-study skills and flexible reading rates.

The reading skills component is a sample of representative skill areas which are considered to be important at all grade levels. It is suggested that the teaching of these skills occur when diagnostic data indicate a need for specific skill teaching. The use of this approach, in which the teacher takes into account variations in students' reading performance, leads to flexible grouping.

The following curriculum bulletins may be consulted for specific teaching strategies in each of these areas:

READING

HANDBOOK FOR LANGUAGE ARTS,
Pre-K, Kindergarten,
Grades One and Two
1965-1966 Series, No. 8

HANDBOOK FOR LANGUAGE ARTS,
Grades Three and Four
1969-1970 Series, No. 6

HANDBOOK FOR LANGUAGE ARTS,
Grades Five and Six
1972-1973 Series, No. 8

HANDBOOK FOR ENGLISH LANGUAGE ARTS,
Grades Five thru Twelve,
Reading and Literature
1967-1968 Series, No. 10

SEQUENTIAL LEVELS OF READING SKILLS,
Prekindergarten - Grade Twelve
1967-1968 Series, No. 4

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READING

SKILL AREA	SKILLS AND KNOWLEDGE
PRE-READING	
Visual Discrimination	Objects, pictures, and forms can be distinguished by their similarities and differences. Non-verbal stimuli: gestures, facial expressions, pictures indicate meaning. Letters vary in shape and form (distinctive features). Each letter of the alphabet has upper and lower case manuscript and cursive forms. Signs and labels convey meaning.
Auditory Discrimination	Sounds can be differentiated by their differences in tone, intensity, etc., e.g., bell vs drum.
Listening Skills	Television, radio, and stories provide listening for content, organization, character development, imagery enjoyment, etc. Aural directions provide listening for sequence and details.
Speaking Skills	Words, sentences, stories convey experiences, develop fluency in language and vocabulary. Naming objects, letters, forms, colors expand language to include classifications from smaller to larger categories.
WORD POWER	
Sight Words	A limited number of words can be recognized by their shapes (configurations). The Dolch list of 220 words is a base for sight reading. Words which do not convey meaning (function words) are recognized on sight, e.g.: of, but. Words similar in appearance may be distinguished on sight, e.g.: then, them. Content fields, e.g., English, mathematics, science, provide a basis for new sight words.
Phonic Analysis	A final sound in a word may not be the sound of the final symbol, e.g., late.

READING

SKILL AREA	SKILLS AND KNOWLEDGE
	Some consonants blend their sounds in the initial or final position, e.g., dr in drawn and nd in land. Words ending in le, are usually divided just before the preceding consonant, e.g., turtle (exception - roots ending in ck). Some letters placed together make one sound (diagraphs), e.g., ea as in peanut, ch as in child. Some vowels when placed together blend their sounds (diphthong) into a new sound. e.g.: oi as in noise, ou as in mouse. Some letters have more than one sound. e.g., s as in sun and busy; c as in car and cent. Some words have similar combinations of letters (word families), e.g., all, ball, and tall. Some letter combinations have one silent letter, e.g., knock, crumb. Vowels when followed by r, w, l have a modified sound, e.g., park, paw, ball.
Structural Analysis	Words may be formed by joining two words (compound words), e.g., snow man. Root words may be located in different positions, e.g., self as in selfish, unselfish, himself. Word roots change when plurals are formed, e.g., f changes to v before es is added as in wolf - wolves, life - lives. Prefixes modify the meanings of words, e.g., unhappy, adhere, discover. Suffixes modify the meaning and/or function of words, e.g., mileage, development, worker. An apostrophe shows the omission of a letter or letters in a word (contraction), e.g., I'm, don't. Words are divided into as many syllables as they have vowel sounds. Compound words are divided between the root words, e.g., downtown - skyscraper. Words are usually divided between the prefix and the root, e.g., un tie - dis appoint.

READING

SKILL AREA	SKILLS AND KNOWLEDGE
	Words are usually divided between the root and the suffix, e.g., play ful - work er. Words which have two medial consonants together are usually divided between the two consonants (cvc cvc) e.g., num ber, but ter. Words which have one medial consonant are usually divided between the previous vowel and the consonant (v cv), e.g., a corn, u pon.
Context Clues	Words may have multiple meanings. (homonym/homophone) e.g., I can see the sea. I saw the woman saw the wood. Meaning of words may be embedded in sentences, e.g., They are called nomads, which means wandering herdsmen. Commas may set apart definitions in unknown words, e.g., He made a vow, or promise, never to return. Dashes may set apart definitions in unknown words, e.g., He saw the ruby - a red stone - in the ring. Parentheses may indicate synonyms for unknown words. e.g., The militia (a body of soldiers) attacked the post. An asterisk marks a footnoted definition or an explanation. A colon precedes a listing.
COMPREHENSION	
Literal	Experiences consist of many details.
Details	Details enrich oral and written expression. Details may be related to each other according to a purpose, e.g., time sequence, categories. Details express different relationships among ideas. Groups of related details express a generalization.
Sequence	Details can be ordered sequentially. Sequence is recognized by words indicating time, e.g., first, before, after.

READING

SKILL AREA	SKILLS AND KNOWLEDGE
Cause and Effect	Cause and effect relationships are indicated by words such as because, as.
Interpretative	Main ideas may be located at the beginning, middle, or end of a paragraph.
Main Idea	Main ideas may be implied or stated in one or more paragraphs. Main ideas may be inferred. Main ideas summarize the relevant and related details.
Drawing Conclusions	Conclusions are logical inferences based on the material given.
Predicting Outcomes	A series of events ends logically and is predictable. People and objects relate logically and are predictable.
Cause and Effect	Cause and effect may be inferred from sequence of events.
Critical and Creative Reading	
Author's Purpose Mood and Tone	Sources may be evaluated to determine probable point of view. Material can reflect an author's point of view. Cue words may indicate the author's purpose for writing the selection.
Facts vs Opinion	Material should be evaluated to distinguish between fact and opinion. Cue words may be used to distinguish between fact and opinion in written material. e.g.: In my opinion, the report is well written.
Propaganda Techniques	Slant, bias, and sales techniques are forms of propaganda. A variety of propaganda techniques can be used to influence thinking, e.g., bandwagon approach, common folk.

READING

SKILL AREA	SKILLS AND KNOWLEDGE
WORK STUDY SKILLS AND FLEXIBLE READING RATES	
Follow Directions	Simple and complex directions may be given through written or oral channels, e.g.: Open the window. Read all the directions and diagrams.
Locate and Evaluate Information	The library is a source of information. The table of contents and alphabetic sequence contain information. The index and glossary contain information. Paragraph headings and chapter headings are sources of information in textbooks. Key words aid in location of specific information. Sources of information may be appraised for their reliability. Sources of information may be appraised for their suitability. Information may be located using a dictionary and other reference materials.
Organize Information	Outlining assists in organizing information since items are listed in logical order. Ideas may be organized and summarized in a specific pattern. Graphic representations such as maps, globes, charts, diagrams, etc. are ways to locate information.
Rate of Reading	Reading rate adjusts to suit an individual's purpose for reading the selection. Skimming and scanning are forms of rapid reading.

CHILD DEVELOPMENT FOCUS

CHILDREN NEEDS

Basic needs, the same for all children, are the drives that influence behavior. These needs include:

1. NEED TO BE VALUED
   A child's self-image has top priority. A child can't be "somebody" unless the child is "somebody" to someone else. Self-image must be reflected in the eyes and actions of those the child loves and values. All children must be valued for who they are, where they come from, and what they bring with them from their culture, language, desires, and expectations.

2. NEED TO DO
   Children learn by using all their senses to explore, discover, and form judgments about the things in their world.

3. NEED TO SHARE WITH PEOPLE THEY TRUST AND BE TRUSTED TO SHARE
   Children need adults who care, who can guide the children's discovery into mutually respected action, who inspire and develop competence and confidence.

4. NEED TO BE GIVEN A CHANCE TO GROW AT HIS OR HER RATE IN HIS OR HER OWN WAY
   Growth for children has many dimensions - social, emotional, physical, and intellectual. Growth is uneven and highly individual. All children do not reach the same level of growth at the same age, nor does a child grow in the same way in all areas.

PRINCIPLES OF GROWTH & DEVELOPMENT

Basic principles that enable persons to guide children with a degree of assurance include:

1. DIFFERENTIATION
   Development proceeds from simple to complex. In both structure and activity, development is gradual in the direction of complexity and variety. Differentiated structures and functions become organized in new and more inclusive patterns.

2. DISCONTINUITY OF GROWTH RATE
   Development is never uniform or all at the same time. Various parts and systems grow at various rates at a different time. Growth shows characteristic spurts or peaks and then slows down to periods of relative latency.

3. INTERRELATEDNESS OF GROWTH
   Every aspect of the child's life affects every other aspect. The physical and social environment as well as factors of personality and physical development affect academic achievement.

4. DIVERSITY OF GROWTH
   No two children are exactly alike. No two grow quite alike. Wide differences exist among children of the same age, the same family, and from the same community. Each child has his or her unique growth style.

THE TEACHING ADULT SHOULD BE FAMILIAR WITH THE LEVELS OF GROWTH IN EACH AREA, WHICH MAY OR MAY NOT CORRESPOND WITH THE CHRONOLOGICAL AGE OF EACH CHILD.

CHILD DEVELOPMENT FOCUS GRADES K - 2

OVERVIEW: Generally includes children five to seven years of age. Period is characterized by strong perceptiveness and responsiveness to cues and acquisition as well as attempts toward mastery of skills. Changes in physical, intellectual, and social areas are geared toward preparation and adaptation to outside life especially in the school, and the establishment of self-identify.

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Five-Year-Old	Five-Year-Old	Five-Year-Old
• Handedness may have been established. Has fairly good large muscle development though small muscles are not yet able to manage details e.g. tying shoes, writing, sewing. • Energy is boundless. The child can run, jump, hop, and climb. Responds to a signal and can change directions and body movement. Can walk a straight line. • Childhood diseases may occur to cause absence. Prefers simple foods. Reluctant to try new foods. • Gains independence in activities - eating, using toilet, and dressing.	• Generally appears to be calm, quiet, and well balanced. Beginning to be capable of self-criticism, eager and able to carry some responsibility. • Enjoys the world of make-believe but often cannot distinguish between fantasy and reality. Fives dramatize and role-play incidents in home and community life. • Child has a strong sense of possession - does not like to share - however, will share to please adults. • Seeks praise and approval - wishes to conform and please. Explores forming relationships with other children. • Shows signs of independence, and is able to choose his or her own activities and based on prior experience begins to plan and complete simple projects.	• Reads pictures, can retell and invent stories. • Can identify some letters and some words; begins to write words and names. • Can identify some numbers on a calendar or a clock. Can count numbers in sequence to a point and then becomes confused. • Can identify up to four objects without counting. • Identifies some colors, sizes, shapes. • Begins to become aware of notions of sequence time and distance. • Can follow simple oral directions.

CHILD DEVELOPMENT FOCUS GRADES K - 2

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Six-Year-Old	**Six-Year-Old**	**Six-Year-Old**
• Large muscles are better developed than the small ones but the small muscles are now able to handle some writing and tying of shoes. • Child is usually able to skip by now as well as effectively use the other gross motor movements which are incorporated in games and physical activities such as jumping rope. • Health and appetite are generally good in group situations; can be encouraged to try new foods. • High motor activity: bodily and facial: constantly in motion: boisterous. • Tends to be clumsy and takes time to get dressed or go places. • Levels of activity varies from day to day.	• Expects others to fit his or her way of thinking and doing; can be arbitrary and demanding as well as extremely sensitive. • Has strong need for praise and is proud of accomplishments. • Still adapting to school life with transient wish to stay at home; may be reflected in absences. • Is self-assertive; aggressive; wants to be first; less co-operative than at five; keenly competitive and often boastful. • May go to extremes in behavior; cooperative and adequate and at the next moment, resistant and incapable.	• Auditory and visual discriminations are heightened. • Can follow directions with greater concentration. • Demonstrates greater span of attention. • Has begun to use word attack skills to increase vocabulary. • Interest is manifested in scientific phenomena - growing things, prehistoric animals, space. • Has awareness of rules in games. • Feels comfortable with structure and schedule, and knowing what to expect. • Develops skills in many curriculum areas but needs reinforcement in knowledges and skills previously introduced.

CHILD DEVELOPMENT FOCUS GRADES K- 2

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Seven-Year-Old	**Seven-Year-Old**	**Seven-Year-Old**
• Small muscles can now handle writing and some sewing. Eye-hand coordination has developed considerably. • There is further growth in motoric ability, and there is more sustained participation in organized games. Is adept at jumping rope. • Attendance is generally good. Children have strong likes and dislikes as to their dietary preferences. • Periods of activity alternate with quiescence.	• Is sensitive to the tone and nuisances of an adult's voice and responds best to indirect correction. • Maintains relationships with another child for longer periods of time. • Enjoys dramatic play but veers toward reality. The seven loves tall tales and delights in slapstick humor. • Shows a willingness to listen to others and to share ideas. Works with a goal in mind and is able to carry a project through to completion. • Develops self-confidence as skills improve. • Feels sensitive about other's reactions. Afraid of criticism or disapproval; may leave the scene rather than be exposed to criticism. • Moods of pensiveness and resistance alternate with periods of activity; concerned about his or her performance, others' evaluations of him or her. • Can be helpful to others and enjoys socialization.	• Has developed skills of inquiry and discovery to gain knowledge. • Can record simple findings. • Has a good sense of recall to help utilize previous learnings. • Listens to instructions and understands some rules. • Can listen and respond to a second direction while carrying out a first direction. • Has increasing assimulation, absorption, and integration of experiences.

SCOPE AND SEQUENCE

KINDERGARTEN

103

ART - GRADE K

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING *pp: 31-32 Time: 6-9 Weeks The Wide Bristle Brush	The wide bristle brush is suited to work with water on the blackboard or with paint on large paper. The handling of the wide bristle brush develops control of fluid media. One tempera color is required for exploratory work.
DRAWING *pp: 48-49 Time: 6-9 Weeks The Thick Crayon	A thick crayon is used on a flat surface. Manipulation of thick crayon coordinates eye-hand motor activity.
MODELING WITH CLAY *pp: 66-67 Time: 6-9 Weeks Pliability	The pliability of clay permits it to be rolled, kneaded, poked, and smoothed.
WORKING WITH PAPER *pp: 90-91 Time: 3-4 Weeks Shapes and Strips	A few shapes and strips of colored paper can be manipulated.

*ART IN THE ELEMENTARY SCHOOLS, Grades K-6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
USING CLOTH AND TRIMMINGS, YARNS AND FIBERS *pp: 95-96 Time: 6-9 Weeks Weights and Textures	Various kinds of cloth,yarns,and braids have different weights and textures.
CONSTRUCTING WITH WOOD *pp: 123-124 Time: 4-6 Weeks Five Basic Qualities	Wood and other materials are different in size,shape,weight, texture, and color.
BUILDING WITH BLOCKS *pp: 114-115 Time: 4-6 Weeks The Nature of Blocks	Blocks are simple,solid, and permanent forms.

ENGLISH LANGUAGE ARTS - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE	
*p: 30	Literature gives pleasure. Literature improves self understanding. Literature aids in understanding behavior and values of other people
*p: 377	Illustrations provide help in understanding.
Story	
*p: 52	The structure of a story has a beginning, a middle, an end. A folk tale differs from a modern story. Real characters are different from make-believe ones
*pp: 378 - 379	Stories are varied in type and include folktales, Bible stories, animal stories, nature stories, stories about people, places and things.
Poetry	
*p: 373	Poems use rhythm and poetic language, and may have rhyme.
*p: 373	Poems consist of nursery rhymes, lyric poems, narrative poems, and free verse.
WRITING	
*p: 70	Drawings and paintings can express reactions to literature. Drawings and possessions are identified by writing one's name in manuscript form.
*p: 70	Drawings and experiences are a base for oral and written phrases and sentences. Writing proceeds from left to right. Writing has a pattern. Practice in handling tools and materials develops dexterity and control.

*HANDBOOK FOR LANGUAGE ARTS
PRE-K, KINDERGARTEN, GRADES
ONE AND TWO

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LANGUAGE *p: 71	Language is a code for expressing ideas. Word order conveys meaning.
SPEECH AND SPEECH ARTS *p: 18	Questions require appropriately loud responses using full or part sentences. Personal narratives follow a chronological order or simple cause-effect relationship. Amenities, such as thank you, are appropriate.

HEALTH EDUCATION - GRADE KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CLEANLINESS AND HEALTH PROTECTION *pp: 7-8, 22-24 Time: Flexible	Hands should be washed before eating, and after using toilet. Mouth and nose should be covered when sneezing or coughing. Symptoms of illness should be reported to one's parent or teacher immediately. Raw fruit and vegetables should be washed before eating. Doctors and nurses help keep us well by giving examinations and immunizations.
NUTRITION *pp: 10-12, 26-28 Time: Flexible	It is important for children to have a good breakfast every day. It is important to try different kinds of food.
DENTAL HEALTH *pp: 12-13, 28-29 Time: Flexible	Teeth should be brushed after eating whenever possible. Rinsing mouth helps when one can't brush the teeth. The dentist helps to take care of teeth. All children lose their first set of teeth. Children demonstrate correct method for brushing teeth.
MENTAL HEALTH *pp: 13-15, 29-31 Also see FAMILY LIVING INCLUDING SEX EDUCATION Time: Flexible	Sharing and helping others creates good feelings. Each child is important. Children are alike, yet different.

* HEALTH EDUCATION IN ELEM. SCHOOLS

HEALTH EDUCATION - GRADE KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MENTAL HEALTH (continued)	Children have different talents and abilities, e.g. athletics, music, dance.
EYES AND THEIR CARE *pp: 15-17, 32-33 Time: Flexible	Eyeglasses should be worn when needed. It is important to read and work with good light. One should avoid looking directly at sun.
EARS AND THEIR CARE *pp. 17-18, 34-35 Time: Flexible	The ears should be kept clean. Fingers and objects should be kept out of ears. Ears should be examined by a doctor during annual medical checkup. Hearing should be tested regularly.
SAFETY AND FIRST AID *pp. 18-20, 35-37 Time: Flexible	The policeman directs traffic to help children cross the street safely. The correct place to cross a street is at the corner. It is important to obey traffic signals. Accidents should be reported to known adults. Procedures for fire and shelter drills should be obeyed. Safety rules should be observed at the workbench.
EXERCISE, REST, AND SLEEP *pp. 20-21, 38-40	Exercise and play helps one to be healthy. Rest helps the body to get back some of its strength. It is important to get sufficient sleep.

LIBRARY-MEDIA GRADE KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ORIENTATION	Library materials have location symbols for materials in a variety of formats. Books are handled carefully so that spines are not broken or pages torn.
ORGANIZATION	Library-media centers may have an arrangement for materials depending on format, e.g., picture books shelves.
SELECTION *pp. 46-50	Selection of media is based on personal interests.
USE	Books containing simple "one-sitting" stories on such themes as home, family, pets, nature, seasons are browsed.
INTERPRETATION	Sequence of ideas is identified in visual and aural media. Picture clues are used for understanding meaning, e.g., constructing story for wordless picture book. Listening and viewing experiences are shared through visuals, dramatizations and oral reports. Picture book offerings, in a variety of literary and artistic styles, are presented through story telling and story reading, puppetry, filmstrips and 16mm films.

*SCHOOL LIBRARY-MEDIA CENTER: A FORCE FOR LEARNING

MATHEMATICS - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER NAMES AROUND US: READINESS FOR NUMBERS Time: September	
*pp: 4,6,8	Number names in classroom, school, and neighborhood
8,10	Number names from personal data: calendar, birthday, age, addresses, sets of digits, number names for measures
*pp: 10	Number names in stories and rhymes
ONE-TO-ONE CORRESPONDENCE BETWEEN SETS OF OBJECTS Time: September	
*pp: 16,18,20	A set of objects for a set of children: 2 or 3 items of clothing, 2 or 3 food items; parts of one's body: one-for-one, heads, noses, mouths; two-for-two, eyes
*pp: 22,24,26,28,30	Matching a set of 2 or 3 more objects with a set of related objects: buttons and buttonholes, scissors and slots, dramatization, party items to match those in a model set; 3 or more solid forms and spaces in a formboard
PERCEIVING THE NUMBER IN A SET AND ITS SUBSETS WITHOUT COUNTING Time: September or October	
*pp: 42,44	Concept of pair; symmetrical items of clothing or body parts
*pp: 44,46,48,50	Zero, one, two, three (or more) objects; sets of 1, 2, 3, (or more), or non-existent objects (a zero number) in house-play center; 0, 1, 2, or 3 (or more) objects in mystery boxes and bags; sets of objects around the classroom or on trips
Time: October or November *pp: 50,52,54	Sets of two or three objects, subsets within sets, 2 or 3 instruments, 3 toy vehicles
Time: November or December *pp: 54,56,58	Sets of from zero through four (or more) objects, number in sets of 1 or 2 or 3 or 4 (or more) bowling pins

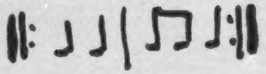
MATHEMATICS - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PERCEIVING THE NUMBER IN A SET AND ITS SUBSETS WITHOUT COUNTING Time: December *pp: 58,60,62,64,66	Sets of two, three, or four objects, subsets; set of cubic blocks; numerousness of objects in science collections; spots on a domino
PERCEIVING THE NUMBER IN A SET AND ITS SUBSETS: COUNTING COMBINING AND SEPARATING Time: January *pp: 84,86,88,90	Counting 2, 4, and 6 (or 8) objects; set and number in set of 1, 2, 3, 4, or more objects; number in set of 4 house-play objects, even arrangement; number in set of 4 science items; sets of 4 and 6 toy vehicles
*pp: 98,100,102	3 and 5 (or 7) objects; sets of 3 science items, buttons, cubic blocks; number in sets of 5 small objects; value of 1 penny, 5 pennies
*pp: 104,106,108,110,112	Doubles within an even number of objects, through a total of 6 or more; number of four-wheeled vehicles in set and in two subsets; sets of 4 and of 6 toy milk bottles or eggs; number in sets of 2, 4, 6, (or 8), doubles; domino, doubles
Time: February *pp: 114,116,118,120,122 124,126	Additions and subtractions within 2, 3, and 4 objects; 3 house-play objects; sets of zero, 1, 2, 3, and 4 science materials; cubic blocks
*pp: 126,128,130,132	Adding one and taking away one within 6 objects

MATHEMATICS - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER LINE CONCEPTS: EARLY LEVELS OF DEVELOPMENT Time: March *pp: 152,154,156,158,160, 162,164,166,168	Number in a line of objects through 6 or more; two lines of 1, 2, 3, 4, or 5 related objects by number
Time: April *pp: 174,176,178,180	Concepts of length and weight; additions and subtractions within 4
*pp: 180,182	Length of an object by matching with unit-objects placed end-to end
GEOMETRIC CONCEPTS AND FRACTIONAL PARTS: EXPLORATION AND EXPERIMENTATION Time: May *pp: 192,193,194	Numerousness of very small objects in heaps, halves and fourths;
*pp: 196,198	Divides 8 and 10 objects into halves
Time: June *pp: 189,200,202,204	Capacities of 3 cylindrical containers, one half of a countainer measuring capacities; compares heights of water levels, weights, and temperatures; capacities, non-standard units of measure
*pp: 204,206,208,210,212, 214,216,218	Some properties of rectangular cylindrical and spherical objects; time and direction; surfaces, corners, edges; flat surfaces, curved surface; circular movements, clockwise movements, directions of hands and numerals on the clock

MUSIC - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MOVEMENT	Body movement can express the high-low, slow-fast, and loud-soft musical concepts.
Reacting to Music through Body Movement	March music, $\frac{2}{4}$, $\frac{4}{4}$, $\frac{6}{8}$ has a strong rhythmic pulse.
	Body movement can be expressed through walking, skipping, clapping, hopping and swaying.
RHYTHM * p. 4-6	Rhythm is present in the universe, in our body and in music.
The Steady Beat	Simple rhythm patterns are taught through repetition. 
	Basic rhythm patterns may be played on simple rhythm instruments, e.g., triangle, drum, tambourine.
SINGING *p.12	Singing is a pleasurable experience.
Action and Song Stories	Songs encompass learning experiences, e.g., activity songs, action songs and song stories. Songs are presented through the rote approach.
LISTENING	Learning to listen is important.
Habits of Listening	Some listening habits include: attention; listening for rhythm and melody; listening for mood, dynamics; responding to music by clapping, tapping.

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*MUSIC IN THE ELEMENTARY SCHOOLS LEVELS I - II

PHYSICAL EDUCATION - GRADE KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SELF-TESTING ACTIVITIES *p. 60	Airplanes, Rocking Horse, Rooster Walk, See Saw
RHYTHMS *pp. 61-63	Skills to be developed through activites include: Falling Flying through arm movements Galloping Hopping and Jumping Leaping Marching Nodding Head Rolling Sawing Skating Skipping Sliding Spinning Stepping Swinging Tip-Toeing Tumbling Twisting
SONG PLAYS **pp. 64-71	

SKILL	SONG PLAY
Jumping	Ampe
Swinging	Bow Belinda
Promendade	Here We Go Round the Mountain
Skipping	Jimmy Crack Corn
Swinging	Sourwood Mountain
Running, Whirling, Strutting	Going to Boston

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* PHYSICAL EDUCATION GRADES PRE K - 6

** Basic Song Plays and Dances for the Grade

PHYSICAL EDUCATION - GRADE KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
GAMES WITHOUT EQUIPMENT *pp. 72-75	Skill	Game
	Running	Cat and Rat
	Right and Left	Kitten Wants a Corner
	Imaginative Expression	Relay Race
	Listening Skills	Simon Says
	Skipping	Skip Tag
GAMES WITH EQUIPMENT *pp. 76-79	Skill	Game
	Throw and Catch	Ball Bounce
	Hand and Eye Coordination	Ball Rolling
	Catching & Rolling a Ball	Block Maze
	Ball Rolling & Coordination	Bowling
	Throwing & Dodging	Dodge Ball
	Jumping, High and Low	Jump Over
	Throwing and Catching	Musical Pass Ball
CLASSROOM GAMES *pp. 80-86	Skill	Game
	Counting-running	Blast Off
	Listening	City Sounds
	Watching	Do As I Do
	Hand and Eye Coordination	Feed the Elephant
	Colors	I See Something
	Imagination	Let's Go on a Bear Hunt
	Walking	Mix-up Game
	Listening	Mother Cat
	Reaction to Sounds	Musical Chairs
	Safety	Put Your Finger in the Air
	Numbers	Ten Little Indians
	High and Low	Three Billy Goats Gruff
	Walking	Train
	Relaxation	Very Quietest Game
	Sensory Identification	What Is It?
	Observation	Who Is Missing
	Laterality	Zip

SCIENCE - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SPACES AND PLACES *pp: 28-31 Time: 2 weeks	
Spatial Relationships	We are nearer to some things than to others. Moving faster and taking giant steps get us to places faster. Things above you are higher. Things below you are lower. Up and down depends upon where you are.
WHAT'S ALIVE *pp: 32-37 Time: 3 weeks	
Characteristics of Living Things	There are many kinds of living things. Animals move, eat, breathe, grow, and protect themselves. Plants are living things.
DISCOVERING WITH OUR SENSES *pp: 38-43 Time: 2 weeks	
How Do We Use Our Senses?	We use our nose, fingers, ears, tongue, and eyes to find out about things.
DISCOVERING WITH A MAGNIFYING GLASS *pp: 44-47 Time: 3 weeks	
Using A Magnifying Glass	A magnifying glass makes things look bigger, helps us to see things more clearly, helps us to see things we did not see before, and helps us to see what is happening.

*SCIENCE - K-2 #7 - 65-66 Series

SCIENCE - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
UPHILL AND DOWNHILL *pp: 48-53 Time: 3 weeks	
The Characteristics of a Hill	A hill is higher at one end and lower at the other. Some are steeper than others. Going up a hill is harder than coming down.
Placing a Ball on a Hill	A ball can roll down a hill without a push. Some things roll or slide or do not move down a hill. A rolling ball will continue to roll after reaching the bottom and will stop on a level surface. The steeper the hill, the farther the ball rolls. A push is needed to roll a ball uphill.
SEEDS AND FRUITS *pp: 54-58 Time: 3 weeks	
Where Seeds Are Found	A fruit bears seeds of its own kind.
Varieties of Seeds	Seeds have many different sizes, shapes, colors, coverings, and arrangements. Seeds and fruits are parts of a plant.
Planting of Seeds	Seeds give rise to plants when they are watered.
HEAT CHANGES FOOD *pp: 59-62 Time: 3 weeks	
Various Foods are Changed by Heating	Applesauce, popcorn, toast, powdered gelatin, rice, spaghetti, etc., change when heated.

*SCIENCE - K-2 #7 - 65-66 Series

SCIENCE - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SOUNDS AROUND US *pp: 63-70 Time: 4 weeks	
Children Listen to Many Sounds	There are many different sounds wherever we are.
Loud and Soft Sounds	Some sounds are louder than others. We can control the volume of our voices and of objects around us.
High Sounds and Low Sounds	We can control the pitch of the sound.
LIGHT AND DARK *pp: 71-74 Time: 3 weeks	
How Can We Make Our Room Dark	Turning off the lights, pulling the shades, or having a cloud block the sun's light will darken a room.
Sources of Light	Light comes from the sun, moon, stars, electric light bulbs, and candles.
Formation of Shadows	Shadows can be made by stopping the light. The closer the object is to the screen, the darker the shadow. The shape of a shadow tells what is making it. A shadow moves with the object making it.
GETTING WET AND DRYING *pp: 75-79 Time: 3 weeks	
Characteristics of Wet Objects	When objects get wet they may change the way they look, feel, and smell.

*SCIENCE - K-2 #7 - 65-66 Series

SCIENCE - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Soaking Up Water With Paper	Water spreads in different ways on different papers. Waxed paper does not soak up water.
How Things Dry	Water goes into the towel we dry it with. Wet towels can be dried quickly by warming or fanning. Most wet things will dry when left in the open.
A MAGNET HOLDS ON *pp: 80-83 Time: 3 weeks	
What Can a Magnet Do?	Magnets pick up iron Magnets stick to iron. Many objects in the home contain magnets.
WATER MIXES WITH FOOD *pp: 84-89 Time: 3 weeks	
Changes In Foods When Mixed With Water	Lemonade, orange juice, and whole milk may be made from dried, concentrated, or powdered ingredients. Sugar dissolves in water and will dissolve more quickly by stirring or crushing it, or by shaking or heating the water. Sugar and lemon impart a sweet or sour taste to water. Dried fruits taste fresher when they are left in water.
AFTER IT FALLS *pp: 90-94 Time: 2 weeks	
What Happens When Things Fall To The Floor?	When things fall and hit the floor they may break, bounce, flatten, spread out, or pile up.

*SCIENCE - K-2 #7 - 1965-66 Series

SCIENCE - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	The greater the height of the fall, the greater the change. Things that are similar will act the same way when they strike the floor.
SEESAWS AND BALANCES *pp: 95-99 Time: 2 weeks How Is A Seesaw Used To Balance Things?	Equal weights can balance each other on a seesaw. A light weight can balance a heavy one if the heavy one moves closer to the seesaw. A seesaw can be used as a scale.
BLOWING SOAP BUBBLES *pp: 100-105 Time: 1 week How Can We Make Soap Bubbles?	Bubbles can be made by blowing air into soapy water. They have different shapes and sizes. A soap bubble is soapy water and air.

*SCIENCE - K-2 #7 - 1965-66 Series

SOCIAL STUDIES - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
THE CHILD IN HIS/HER SCHOOL AND HOME ENVIRONMENT	
WE LIVE TOGETHER IN THE CLASSROOM *pp. 4-5	Rules are needed when two or more children share activities and materials.
WE LIVE TOGETHER IN THE SCHOOL AND ITS ENVIRONMENT *pp. 6-7	We travel to and from school. Many people are needed in the school to provide services. We have a responsibility for the proper use and care of the school and its facilities.
HOW THE FAMILY MEETS ITS NEEDS *pp. 8-9	Every family needs a home, food and clothing. Families need a source of income so they will have money to buy what they need. Family members have jobs and responsibilities that make them interdependent. There are families in all the countries of the world.
SOME NEEDS ARE MET BY PEOPLE FAR AWAY *pp. 10	We depend on many people in our own country and in other countries. We learn from people in other countries and they learn from us.
WE ADAPT TO CHANGE *p. 11	
Many Changes Occur in Families	Families change in size, composition and move into different homes.

*HISTORY AND SOCIAL SCIENCE SERIES - KINDERGARTEN

SOCIAL STUDIES - KINDERGARTEN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Weather and Seasons	Weather and seasons change family needs. Weather and seasons affect employment. Weather and seasons affect how the family uses its leisure.
WE OBSERVE SPECIAL DAYS TOGETHER AT HOME AND IN SCHOOL *p. 12	Our flag has a special meaning rooted in the past. Our country has grown in many ways. There are many American heroes. We celebrate American holidays because they commemorate special days in our country's past.
WORK-STUDY SKILLS	One's direction is oriented. Various kinds of maps and globes are recognized. Map plans are made. Dates and locations are related to personal experiences. Calendars are used to find dates.

SCOPE AND SEQUENCE

GRADE 1

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ART - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING *pp: 31-32 Time: 6-9 Weeks Wide Brush and Fluid Material	Separate,connected, or winding brush strokes are possible with fluid material. Masses of color result from use of wide bristle brush with fluid material.
DRAWING *PP: 49-50 Time: 6-9 Weeks Line Quality	Lines tangle in a drawing.Lines tend toward the spiral or circular.
MODELING WITH CLAY *pp: 67-68 Time: 6-9 Weeks Hand and Fingers	Clay can be shaped in many ways by hands and fingers.
WORKING WITH PAPER *pp: 91-92 Time: 4-6 Weeks Three Ways With Paper	Paper can be manipulated by rolling,folding,and tearing.

*ART IN THE ELEMENTARY SCHOOLS, K-6

ART - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
USING CLOTH AND TRIMMINGS, YARNS AND FIBERS *pp: 95-96 Time: 4-6 Weeks Five Ways With Materials	Materials can be manipulated by rolling,folding,gathering,tying or cutting.
CONSTRUCTING WITH WOOD AND OTHER MATERIALS *pp: 123-125 Time: 4-6 Weeks Pre-Cut Shapes	A limited assortment of pre-cut shapes can be manipulated.
BUILDING WITH BLOCKS *pp: 114-115 Time: 2-4 Weeks Moving Blocks	Blocks can be touched,grasped,pushed, and lifted.

ENGLISH LANGUAGE ARTS - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE	
*p: 91	Literature is language at its best. Literature evokes many different emotional responses e.g. humor, grief, excitement and wonder.
*p: 94	Libraries are the depositories of many different kinds of books.
Stories	
*p: 380	The plot unfolds through a series of episodic events leading to a logical conclusion.
*p: 381	Characters behave in ways which are plausible.
*p: 380	Biographies are stories about real people.
Poetry	
*p: 372	The enjoyment of poetry is extended by oral reading.
WRITING	
*p: 131	Ideas are recorded.
*p: 160	Manuscript writing looks very much like print. Manuscript letters require only two basic strokes: a circle and a straight line. Manuscript writing is not joined.
*p: 133	Dictation provides practice for capitalization, end punctuation, and spelling.
LANGUAGE *p: 150	Words may have several meanings. Careful selection of words leads to precision.
*p: 153	Words may have similar or opposite meanings. Ideas may be expressed in different sentence patterns. The Basic List of Spelling Words contains words appropriate for each grade.

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*HANDBOOK FOR ENGLISH LANGUAGE ARTS PRE-KINDERGARTEN, GRADES ONE AND TWO

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SPEECH AND SPEECH ARTS *p: 19	Informal reports follow such guidelines as keeping to the topic, following some appropriate order.
	Teachers' names and classmates' names are appropriate forms of address.
*p: 129	Creative dramatics and puppetry stretch the imagination and interpret experiences.

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HEALTH EDUCATION - GRADE 1

CONTENT AND TOPIC	SKILLS AND KNOWLEDGE
CLEANLINESS AND HEALTH *pp. 41-43 Time: Flexible	Use one's own towel, washcloth, and other personal articles to prevent spread of disease. It is important to bathe frequently. Keep hands, fingers, and objects away from one's nose, mouth and face. When ill, one should stay at home in order to avoid spreading the illness to someone else. The family doctor helps us to keep healthy.
NUTRITION *pp. 46-48 Time: Flexible	There are many foods that help to keep the body healthy. These are from the four major groups: milk and milk products; meat, poultry, and fish; vegetables and fruits; and bread and grain cereals.
DENTAL HEALTH *pp. 49-50 Time: Flexible	The teeth are used every day and are important in the life of all human beings.
EYES AND THEIR CARE *pp. 53-55 Time: Flexible	Keep fingers and other objects away from the eyes. Seek the help of an adult if something gets into the eye. The eyes should be relaxed after close work.

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* HEALTH EDUCATION IN ELEMENTARY SCHOOLS

HEALTH EDUCATION - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
EARS AND THEIR CARE *pp. 55-57 Time: Flexible	Keep fingers and other objects away from the ears. Loud noises can be harmful to the eardrum.
SAFETY AND FIRST AID *pp. 57-60 Time: Flexible	Follow regulations that have been set up for safety. The best route to school is the safest route. Cross at corners, walking within the crosswalk lines. Strange animals can be dangerous. It is dangerous to go near or touch electric switches and outlets with wet hands. Simple cuts and wounds should be cleaned thoroughly with soap and water.
EXERCISE, REST, AND SLEEP *pp. 60-62 Time: Flexible	Sufficient sleep and rest is important for one's health.
MENTAL HEALTH *pp. 51-52 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: Flexible	Parents, teachers and other important adults should be consulted when help or advice is needed about personal problems.

LIBRARY-MEDIA GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ORIENTATION	Circulation procedures allow materials and/or equipment to be borrowed for home and/or classroom use. Kinds of media are identified, e.g., still projection materials, paperback books.
ORGANIZATION	Alphabetizing to first letter gives pupils the location of picture books by author.
SELECTION	Browsing involves using illustration, blurbs and textual clues to select materials that are of interest.
USE	Record player and simple filmstrip projector are operated. Books containing simple stories on family, pets, seasons, etc. are looked at independently.
INTERPRETATION	Discussion, films and story reading, and picture books are presented to confirm experience, e.g., story of making a new friend; expand experience, story of child in another country; develop sense of fantasy, e.g., cow jumping over the moon.

MATHEMATICS - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER: NUMERATION *pp: 3-15 Time: 60 days	One-to-one correspondence; two-to-one correspondence; many-to-one correspondence Matching elements of two sets of objects using comparison terms such as: more, fewer, as many as; greater than, less than Whole numbers through 30 Counting objects by one, by twos, by fives, by tens, to 50 and beyond Grouping objects by tens and ones; beginning ideas of place value concept Ordering numbers through 50 Concept of even and odd numbers Reading and writing numerals through 50 Ordinal use of the numbers one through 10
ADDITION OF WHOLE NUMBERS *pp: 7,8,10-16 Time: 26 days	Basic facts, sums through 18 Commutative and associative properties of addition; role of zero Addition and substraction as related operations
SUBTRACTION OF WHOLE NUMBERS *pp: 7,8,10-16 Time: 29 days	Concept of subtraction as comparison-difference Basic subtraction facts associated with addition facts Role of zero in subtraction
FRACTIONAL NUMBERS *pp: 11-13,15 Time: 18 days	Concept of halves, fourths, eights, thirds of bulk; of capacity of container Concept of halves, fourths, of an object Separating sets of 10 or more objects into halves, into fourths; naming of objects in each part

MATHEMATICS: GRADE 1, Scope and Sequence, Curriculum Bulletin, 1970-71 Series, No. 2

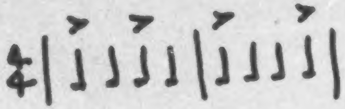
MATHEMATICS - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
GEOMETRY *pp: 5,6,10,13,15, Time: 11 days	Position terms such as: inside, outside, on, center, vertical, horizontal Properties of solid figures: rectangular, cylindrical, spherical, triangular Comparing properties of plane figures: rectangles, squares, circles, triangles Concept of point, line, line segment, chord, radius Symmetry - paper folding
MEASUREMENT *pp: 3,5 - 11,13 - 16 Time: 29 days	Money: recognition and relationships pennies-nickels-dimes-quarter Time: Clock: concept of hour, half-hour telling time by the hour, by the half hour terms such as: before the hours, after the hour Calendar: names of days of the week names of months relationships: days-week; days-month terms such as: today, tomorrow, yesterday, last Sunday, next Tuesday Capacity: conservation of quantity non-standard units of capacity standard unit - cup Weight: non-standard units of weight terms such as: heavier, heaviest; lighter, lightest Temperature: reading thermometer using non-numerical expressions Linear: non-standard units of length terms such as: longer, longest; twice as long; one-fourth as long early concept of perimeter Metric measures: readiness

MATHEMATICS - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ALGEBRAIC CONCEPTS *pp: 10 Time: 3 days	Symbols: +, -, =, placeholder Number sentences: true, false, open Reading and writing number sentences Expressing problems as open sentences Associating numbers with points on a number line
STATISTICS; PROBABILITY; GRAPHS *pp: 16 Time: 5 days	Tallying; concept of frequency Collecting data; representing two or more sets of date by means of objects, pictures, cubes, discs, paper squares, etc. Concept of probability, two possible outcomes

MUSIC - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MOVEMENT	Body movement is a form of musical interpretation.
Improvisation	Contemporary music by composers such as Prokoffiev and Copland encourage a free style of interpretation and improvisation.
RHYTHM * p. 7	Rhythm is a fundamental element of music.
Creating Rhythms	Rhythm is used for communication. A steady beat with accents may be performed. 
	Echo clapping is an important technique in musical development.
SINGING * p. 17-20	Songs can tell us about people, animals and other things.
Repetoire Songs	Correct pitch and sustained quality is important to good singing.

*MUSIC IN THE ELEMENTARY SCHOOLS
LEVELS I - II

PHYSICAL EDUCATION - GRADE I

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
SELF-TESTING ACTIVITIES	Bird Hop	Ostrich Walk
	Kangaroo Jump	Rabbit Hop
SONG PLAYS *pp. 92-102	**Skill**	**Song Play**
	Stamp Counting 2's & 3's	Baa, Baa, Black Sheep
	High and Low	Bluebird
	Right and Left, Running & Arm Strength	Five Little Chickadees
	Bow, Skip	How D'ye Do, My Partner
	Skip	Let Your Feet Go Tap
	Skip, Turning	Looby Loo
	Walk, Skip, Stamp	Oats, Peas, Beans and Barley Grow
	Skip-Using 2, 4, 6 & 8	The Muffin Man
	Over and Under	The Thread Follows the Needle
	Tap Toes, Seven Concept	Twinkle, Twinkle, Little Star
RHYTHMS AND DANCES *pp. 103-107	**Skill**	**Dance**
	Run, Draw Step	Children's Polka**
	Run, Swing	Chimes of Dunkirk
	Left and Right	Passing the Stone**
	Skip, 2's & 3's	Shoemaker's Dance
	Walk, Skip, Forward & Back Swing, Promenade	Shoo Fly
GAMES WITHOUT EQUIPMENT *pp. 108-111	**Skill**	**Game**
	Under	Hound and Rabbit
	Over	Magic Mats
	Running Teams	Single File Relay
	Right and Left	Slap Jack
	Safety-rules	The Policeman

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* PHYSICAL EDUCATION PRE K - 6
** Basic Song Plays and Dances for the Grade

PHYSICAL EDUCATION - GRADE I

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
GAMES WITH EQUIPMENT *pp. 112-114	Skill	Game
	Throw and Catch	Bounce Ball
	Running	Drop the Block
	Hand and Eye Coordination	Ring Toss
CLASSROOM GAMES *pp. 115-117	Skill	Game
	Respond to Direction	Do This, Do That
	To Understand Description	"Have You Seen My Sheep"
	To Locate Objects	Huckle, Buckle, Beanstalk
	Dramatization	Railroad Train
	To Recognize North, South, East and West	Weather-Cock

SCIENCE - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WEATHER FROM DAY TO DAY *pp: 107-119 Time: 10 weeks	
A Sunny Day	The sun heats and lights the earth. The sun helps to dry wet objects. Shade is formed when sunlight is blocked. We read the thermometer to find out about the temperature of the air.
A Windy Day	Wind is moving air. Wind pushes and carries things. Wind can do damage. Wind makes waves. Wind helps dry things.
Cloudy and Foggy Days	Clouds differ in size and shape and position in the sky. A cloud is made of tiny drops of water, or crystals of ice. Clouds are moved by wind. Fog is a low cloud and makes things feel moist and difficult to see.
A Rainy Day	Rain is water that comes from the clouds. Rain soaks into some things but not into others. Some rainwater goes back into the air.
A Cold Day	Water may freeze and form ice. The thermometer goes down. Heat keeps us warm. Salt melts ice.

*SCIENCE - GRADES K-2, #7 - 1965-66 Series

SCIENCE - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
A Snowy Day	Snowflakes have different shapes. Snow may become ice and melts to water. We use safety precautions in the snow.
ANIMALS AND PLANTS IN OUR NEIGHBORHOOD *pp: 134-148 Time: 9 weeks	
Animals In Different Environments	Animals need air, food, water, and shelter. Animals protect themselves in many ways.
Plants In Different Environments	Plants have roots, stems, leaves, flowers, and seeds. Plants change with the seasons.
SOUNDS AROUND US *pp: 149-155 Time: 9 weeks	
Cause of Sound	When sounds are made, some things have to vibrate.
Different Kinds of Sound	Different kinds of objects vibrate to make different sounds.
MOVING ON LAND AND WATER *pp: 156-169 Time: 12 weeks	
Methods of Movement	Objects on wheels move more easily. Pushing or pulling, wind-up springs, motors, and slides cause objects to move easier.

SCIENCE - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Stopping a Moving Object	When a car comes to a sudden stop, the passengers move in a direction opposite to the direction of the stop. Straps, poles, or safety belts are used for protection. Bicycles should be stopped slowly.
Turning Corners	It is easier and safer to move around a corner slowly than rapidly. When a car turns a corner fast, passengers are tilted to the side. A bicycle should slow down on turns.
Safety	Traffic controls are needed.
Floating and Sinking	In water, some things will float, some will sink. Of two objects the same size and shape, the lighter one will probably float.
Building Rafts	Rafts may be made by tying together objects which float. Things filled with air make good rafts.
Tipping Over In Water	Sailboats are steadier when the mast is lower. They have keels to help balance the hull. Loads must be placed at the center of the boat.
An Indoor Boat Show	A boat can be pushed or pulled. Boats are moved by wind, electric motors, springs, rubber bands, or water currents.

SCIENCE - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Staying Afloat	A material filled with air or lighter than water will keep an object afloat.
Pushing an Inflated Balloon Under Water	Objects in water are pushed up by the water.
Sinking a Boat	If enough weight is put into a boat, it sinks.

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SOCIAL STUDIES - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LIVING AND WORKING TOGETHER IN THE COMMUNITY	
Living Together in Groups *pp. 4-5	
People Live in Families	Families vary in size. Families change. Families around the world are alike and different.
Children Go to School to Learn	Children long ago learned in different ways.
Communities Have Similar Facilities to Meet the Needs of the People Living in Them	Some facilities serve the families in a community. Some facilities help people communicate with people in other communities. Some facilities serve people from many communities.
MANY WORKERS SUPPLY MANY NEEDS *pp. 6-7	
Families Depend on the Work of Many People to Supply Their Needs	Some people provide products; some perform services.
Kinds of Work Available Depends on Many Factors	Work available depends on climate, location, seasons, education.
Dividing the Work Gets it Done Faster and Better	Different work needs different skills.

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*HISTORY AND SOCIAL SCIENCE SERIES - GRADE

SOCIAL STUDIES - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
GOVERNMENT SUPPLIES SERVICES TO MEET PEOPLES' NEEDS *p. 7	
People Need Governments to Supply Services They Cannot Supply for Themselves	People can change the laws and the government officials.
People Need Services to Keep Them Healthy and Safe	Government provides health services, opportunities for education and recreation. Government protects people's lives and properties.
People Pay Money to the Government to Pay for all These Services	
People Have A Responsibility To Use These Services Wisely and with Care	
COMMUNITIES ARE INTERDEPENDENT (A Case Study of Food) *p. 8	
The Food We Eat is Produced in Other Places.	Weather, climate, and seasons affect what is grown. Food must be processed so that it does not spoil.
Many Forms of Transportation Bring Food to New York City	
We Buy Our Food in Stores	There are many different kinds of stores.
Communities Differ in the Goods and Services They Provide	The location of a community often affects the type of goods or services it produces.

SOCIAL STUDIES - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CHANGES OCCUR IN THE COMMUNITY *p. 9	
How Our Community Looked Long Ago.	Indians were the earliest families. Dutch and English people were early settlers. Blacks lived in New York City during the early settlements.
How Our Community Grew and Changed	Some families move into the community, others move out. The people who live in our community come from other communities and other countries such as Europe, Puerto Rico, Southeastern United States.
COMMUNITIES OBSERVE SPECIAL DAYS *p. 10	
Special Days Relating to Family and Community Events	Some special days relate to the seasons; e.g., Labor Day.
People in the United States Celebrate Special Days Commemorating Events and People in Our Country's Past and Present	Some special days relate to the family; e.g., birthdays, homecomings. Some special days relate to the community; e.g., Puerto Rico's Discovery Day, Jewish Heritage Week, Negro History Week.
Special Days and Customs in the Cultures of Other People.	Chinese New Year, Three Kings Day, Channukah,are holidays celebrated by many New Yorkers.
Symbols of Our Country and Their Meaning	Our flag, the salute, patriots' songs, and historical landmarks are a heritage we can all share.
Practice in Democratic Living in Our Class, School, Community	

*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 1

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WORK-STUDY SKILLS	The title page and table of contents are used to find information in a book. Names of cardinal directions are used. Map symbols are recognized. Books, magazines, and periodicals are located in a library. Appropriate titles are selected for pictures. Books related to a subject are located.
CURRENT AFFAIRS	Current affairs should be studied regularly throughout the social studies program in order to help pupils understand important current problems, to enable them to see how these affect their lives, and to assist them in developing a sense of civic responsibility. Wherever possible, bridges between the past and the present should be sought and developed.

SCOPE AND SEQUENCE

GRADE 2

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ART - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING *pp: 35-36 Time: 6-9 Weeks Design Sense	Design depends upon lines and shapes. Increased use of color produces greater interest.
DRAWING *pp: 49-50 Time: 6-9 Weeks The Shape of Things	Separate shapes vary in size. Shapes tend toward the circular. Shapes are repeated. Shapes are arranged in available space.
MODELING WITH CLAY *pp: 67-68 Time: 4-6 Weeks Simple Form	Different clay shapes are combined in simple arrangements. Clay shapes are non-realistic and simple in form. Surface treatment can be varied.
WORKING WITH PAPER *pp: 91-92 Time: 2-4 Weeks Simple Arrangements	Colored paper shapes and strips are combined in simple non-representational arrangements. Parts are fastened together by pinning or pasting.

*ART IN THE ELEMENTARY SCHOOLS, Grades K-6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
USING CLOTH AND TRIMMINGS, YARNS AND FIBERS *pp: 98-100 Time: 4-6 Weeks Combining Materials	Designs are made by combining materials. Materials are combined by pinning, stitching, or using an adhesive.
CONSTRUCTING WITH WOOD AND OTHER MATERIALS *pp: 123-125 Time: 4-6 Weeks Variety in Shapes	An assortment of wooden shapes is used in construction. Constructions are non-representational. Hammer and nails are used to build.
BUILDING WITH BLOCKS *pp: 115-116 Time: 2-4 Weeks Structures and Stability	Various sizes and shapes of blocks make linear, wall, and floor-type structures. Stability and balance is achieved through arrangement of blocks.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE	
*p. 195	Literature is read to gain insight into basic human values. Literature is read to broaden horizons. Literature develops critical thinking and imagination for deeper interpretation. The selection of works of literature is based on the spiral development that helps children grow in their understanding of each type.
*p: 196	Literature is the work of individual authors and illustrators. Literature leads to an understanding of other cultures.
Folk tales *p. 378	Each culture has its lore of tales transmitted over a long time.
Fairy tales *p: 378	Fairy tales are folk tales that describe fairies, giants, or trolls who have magical powers.
Animal Stories *p. 379	Animal stories frequently employ animals who have human characteristics.
Biography *p. 380	Biographies relate the lives of real people.
Poetry *p. 372	Poems have a singing quality. Poems use words creatively. Poems present very clear descriptions of nature and feelings.

*HANDBOOK FOR ENGLISH LANGUAGE ARTS PRE-K, KINDERGARTEN, GRADES ONE AND TWO

ENGLISH LANGUAGE ARTS - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WRITING *p. 240	Writing is a personal expression of ideas, experiences, and information. Writing is generally an independent activity. There are two main types of writing: factual (expository) and expressional. Writing letters is a method of sending a personal communication to acquaintances.
*pp: 242 - 246	There are certain conventions to be followed in written communication: capital letters, end punctuation.
LANGUAGE *p: 269	The larger the vocabulary the easier it is to express the ideas clearly and effectively. The language of school may be different from the language of home and community. The Basic List of Spelling Words contains words appropriate for each grade.
SPEECH AND SPEECH ARTS *p. 232	Discussion is the method by which ideas are expressed freely and attention is given to other points of view.
*p: 258	Comparison and examples make ideas and reports clearer.
*p: 222	Oral reading requires understanding phrasing, stress, clear enunciation, and dramatic quality.

HEALTH EDUCATION - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CLEANLINESS AND HEALTH PROTECTION *pp. 63-65 Time: Flexible	Germs are found everywhere; they are so tiny that they cannot be seen without a microscope. Some germs can be harmful if they enter the body. Colds may be reduced in number if good health habits are followed. Sick people should rest quietly and comfortably, and have the benefit of medical advice. Sometimes it is necessary to go to a hospital for special treatment. People should have medical examinations on a regular basis. Immunizations prevent certain diseases by defending the body from harmful germs.
NUTRITION *pp. 69-70 Time: Flexible	Food is important for growth, energy, and heat.
DENTAL HEALTH *pp. 70-73 Time: Flexible	Children should visit the dentist for regular checkups. Brushing and flossing helps to clean the teeth. A nutritious diet helps teeth to remain strong and healthy. Sweets and soft drinks may be harmful to the health of the teeth.
MENTAL HEALTH *pp. 74-77 Time: Flexible	Work, exercise, and play make a person feel better. Sufficient rest and sleep make a person feel better.

* HEALTH EDUCATION IN ELEM. SCHOOLS
FAMILY LIVING INCLUDING SEX EDUCATION

HEALTH EDUCATION - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
EYES AND THEIR CARE *pp. 77-79 Time: Flexible	The eyes help us see the world around us. The eyes are important organs that assist in living a full rich life. Eyes help to promote wholesome learning experiences.
EARS AND THEIR CARE *pp. 80-82 Time: Flexible	The sense of hearing is important to one's safety, health, ability to learn, and happiness. Children who have hearing difficulties should see a physician. The otologist or ear specialist, will give treatment and help if it is necessary. Children whose ears bother them should report this condition to their parents or teacher.
SAFETY AND FIRST AID *pp. 82-87 Time: Flexible	School safety should be practiced regularly. Make the school a safe place by walking (not running) in the halls and on the stairways. Regular fire and shelter drills are a good preparation for emergencies. Following routines in the classroom will help to make the room safe. It is important to follow safety rules in the playground, e.g., climbing, running.

HEALTH EDUCATION - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SAFETY AND FIRST AID (continued)	Swimming and other water sports can be fun when safety rules are followed. Accidents in the home can be prevented by taking simple safety precautions, e.g. tools, toys, electrical appliances. It is important for people giving first aid to make certain their hands are clean.
EXERCISE, REST, AND SLEEP *pp. 87-90 Time: Flexible	Daily exercise such as rhythms, games, and dance are important for one's health. Rest and sleep are necessary for body growth.

LIBRARY-MEDIA GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ORIENTATION	The meaning of author, illustrator, title, publisher, date on the title page is explained. The meaning of the terms: spine, jacket, narrator are explained. Author and title are found on spine and title page. Record title is found on record jacket.
ORGANIZATION	Fiction, non-fiction and magazine collections are located in specific areas. Filmstrip, recording and film loop collections are located in specific areas.
SELECTION	Response to literature may be through creative arts activities, e.g., dioramas, puppets, original illustrations. Media are selected on the basis of personal interests and ability.
USE	Filmstrips, records and books can tell a story. Cassette players, 8mm film loop projectors and filmstrip projectors are used. Picture dictionary is used to define terms.
INTERPRETATION	Main idea is identified from material in a number of formats, e.g., filmstrip, recording. Systematic introduction of standard literature and artistic films for children is continued.
PRODUCTION	Pictures or series of pictures based on ideas in a story are constructed.

MATHEMATICS - GRADE 2

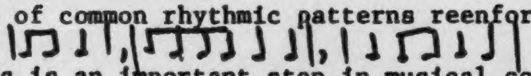
CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER: NUMERATION *pp: 3-13 Time: 22 days	Count by hundreds, tens and hundreds to 10 hundreds Understand place value and record in expanded notation to 100 Round numbers to nearest decade
ADDITION *pp:4-13 Time: 22 days	Basic facts Algorithm: vertical format, two addends, sums through 99, with and without exchange Column addition: more than two addends, sums through 99, no exchange Addition and subtraction as related operations Observe and use commutative and associative properties of addition
SUBTRACTION *pp:4-13 Time: 24 days	Basic facts Algorithm: vertical format, regrouping minuend, 1 ten for 10 ones Subtraction as comparison-difference, missing addend
MULTIPLICATION *pp:7,9,10,12 Time: 11 days	Counting by twos through 10, by threes through 15, by fours through 20, by fives through 25 Basic facts: twos through 5 twos, threes through 5 threes, fours through 5 fours, fives through 5 fives Observe commutative property of multiplication
DIVISION *pp:8,11,12 Time: 9 days	Counting backwards by twos from 10, by threes from 15, by fours from 20, by fives from 25 Basic facts: twos through the number of twos in 10, threes through the number of threes in 15, fours through the number of fours in 20, fives through the number of fives in 25

MATHEMATICS: GRADE 2, GRADE 3, Scope and Sequence, Curriculum Bulletin, 1967-68 Series, No. 21

MATHEMATICS - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FRACTIONAL NUMBERS *pp: 6,7,9.12 Time: 7 days	Concept of thirds of a whole Finding ½, ¼, of a number of things Equivalence: fourths and halves
GEOMETRY *pp: 3,5,9 Time: 5 days	Concepts: point, line segment, ray line Properties of geometric figures: rectangle, square, triangle circle Recognition of the differences between symmetrical and asymmetrical patterns
MEASUREMENT *pp: 4-12 Time: 18 days	Linear: foot, inch, half-inch; metric, centimeter, meter Money: penny, nickel, dime, quarter, half-dollar, dollar Capacity: pint; metric, liter Quantity: dozen, half-dozen Weight: ounce; metric, gram (mass) Time: clock - half-hour calendar - number of months in year Temperature: non-standard units of measure; metric, Celsius scale
OTHER CONTENT INCLUDED *pp: 4,5,8,10,12,13 Time: 8 days	Concepts from algebra, probability; problem solving and reasoning

MUSIC - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
RHYTHM	Rhythm plays an essential role in the development of music.
Reading Rhythms, Accents and Rests	Reading musical notation of common rhythmic patterns reenforces musical learnings.  Composing rhythm patterns is an important step in musical composition.
SINGING * p. 20	Musical concepts are realized through singing, e.g., high-low pitch; loud-soft dynamics.
Musical Concepts	Song material is used to bring about an awareness of in-time singing (pitch matching and sustained quality).
LISTENING * p. 73-75	Listening is a readily available vehicle through which children discover meter, mood, pitch and dynamic differences.
The Concert Hall	Attendance at live musical performances, in-school and out of school add an important aspect to the listening experience (Young Audience performances).
LISTENING * p. 23-28	Environmental sounds are part of music (the sound of motors, trains, horses, thunder).
Identifying Musical Instruments	An orchestra is made up of many musical instruments (strings, woodwinds, percussion, brass).
INSTRUMENTAL MUSIC * p. 29-35	Musical instruments are an extension of our ability to create music.
Simple Rhythm Instruments	Musical instruments can create environmental sounds, e.g., (thunder can be produced on a bass drum). Musical instruments can be used to play along with songs (accompanying songs).

*MUSIC IN THE ELEMENTARY SCHOOLS LEVELS I - II

MUSIC - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
INSTRUMENTAL * p. 33-35	"Non-pitched" instruments such as the drums, cymbals, triangle and rhythm stocks can be orchestrated to accompany songs and recordings.
Pitched and Non-Pitched Instruments	Simple melodies can be played on "pitched" musical instruments, such as the xylophone, metalophone, melody bells. Both "pitched" and "non-pitched" instruments can be combined in one orchestration (Twinkle, Twinkle Little Star).

PHYSICAL EDUCATION - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
SELF-TESTING ACTIVITIES *pp. 121-122	Balance Walk	
	Jumping Frame Activities	
	Reaching for the Moon	
	Tall Trees Growing	
	Tight-Rope Walk	
SONG PLAYS *pp. 123-154	Skill	Song Play
	Walk, Draw Step, 4's & 8's	Ach! Ja!**
	Slide, Skip, Cast Off	A Hunting We Will Go
	Skip, Walk, Nearest	Bingo
	Walk, Skip, Forward, Backward	Hansel and Gretel
	In, Out, High & Low	Hokey Pokey
	Slide, Run, Turn, Tap	Jump Jim Jo
	Skip, Draw Step, High/Low	London Bridge**
	Walk, Skip, Inside/Outside	Rig-a-Jig-Jig
	Skip	Skip to My Lou
	Skip, Hook Swing	The Wheat
	Slide, Laterality	Carousel
DANCES *pp. 155-161	Skill	Dance
	Forward, Side, Forward	Adenkum*
	Forward and Back, Promenade	Circassian Circle**
	Run Stamp	Danish Dance of Greeting
	Walk Skip	Hopp Mor Annika**
	Honor, Swing, Promenade	O Susanna**
	2 Step	Sibre Manenke**
GAMES WITHOUT EQUIPMENT	Skill	Game
	Running, Teamwork	Circle Relay
	Change pace & Direction	Flowers and Winds
	Dodging	Hill Dill
	High/Low, Over/Under	Magic Bridges
	Change of Direction	Puss in Circle

* PHYSICAL EDUCATION GRADES PRE K - 6
** Basic Song Plays and Dances for the Grade

PHYSICAL EDUCATION - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
GAMES WITH EQUIPMENT	**Skill**	**Game**
*pp. 165-171		
	Throwing & Catching	Call Ball
	Running-Teamwork	Circle Ball Relay
	Hand-Eye Coordination	Circle Pass Ball
	Ball Handling	Ball Handling
	Coordination-Fitness	Rope Jumping
	Running-Dodging	Running-Dodging
TUMBLING		
*pp. 172-173		Roly Poly
		Forward Roll
CLASSROOM GAMES	**Skill**	**Game**
*pp. 174-175		
	Right/Left	Automobile Race
	Dramatization	Trades
	Listening	Who Is It?
	Color Recognition	What Color is Missing?

SCIENCE - GRADE 2

CONTENT AND TOPIC	SKILLS AND KNOWLEDGE
ANIMALS AND PLANTS IN THE CLASSROOM *pp: 171-186 Time: 8 weeks	
ANIMALS	
Animal Pets	There are many kinds of pets.
Needs of Pets	Animals need air, food, water, and shelter. Some care for themselves; others need help.
Movement of Animals	Animals swim, hop, crawl, run, or fly.
Reproduction	Animals look like their parents. Some living things undergo many changes before they look like others of their species.
Survival	Animals protect themselves in many ways.
PLANTS	
Needs of Plants	Plants need water, soil, light, the proper temperature, and space in which to grow.
Plant Parts	Common plants have leaves, stems, roots, and sometimes flowers.
Structure of a Seed	A seed contains a baby plant.
Growing Plants	Some plants can be grown from parts of a plant.

*SCIENCE - GRADE K-2 #7 - 1965-66 Series

SCIENCE - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SUNLIGHT AND SHADOWS *pp: 187-195 Time: 8 weeks	
Sun in the Sky	The sun is the chief source of light. The sun is very far away. The sun is always in the sky and appears in different places at different times. When the sun sets, the sky darkens and night begins.
Shadows in the Sunlight	When something comes between the sun and the earth, it makes a shadow. The length and direction of a shadow depend upon the position of the sun. Shadows help to tell time.
MAGNETS *pp: 196-210 Time: 7 weeks	
Using Magnets	There are many different kinds of magnets. Magnets will pick up objects made of iron.
Strength of Magnets	Some parts of a magnet are stronger than others. A magnet is strongest at its end. Magnets can attract through some substances.
How Magnets Affect Other Magnets	When 2 magnets are brought near each other, they pull together or push apart. A magnet can push or pull another magnet without touching it.

SCIENCE - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WATER, SOIL, ROCKS, AND AIR *pp: 211-235 Time: 10 weeks	
Water Around Us	Water takes the shape of its container.
Mixing Substances With Water	When different substances are mixed with water they may dissolve, sink, or float. Stirring makes some things dissolve faster in water. Some substances color water.
Soil Around Us	Soil is found in many places. Water and wind can carry soil away. Moist soil holds together better than dry soil. Different kinds of soils have different colors. Soil has living and non-living objects in it.
Rocks Around Us	There are many kinds of rocks. Rocks are different in size, smoothness, hardness, and luster. They can be classified according to these properties.
Sand	Sand is made of tiny pieces of rock.
The Air Around Us	Air is all around us and in water and soil. Air occupies space and has weight Air takes the shape of its container.

SCIENCE - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MOVING IN THE AIR *pp: 236-243 Time: 7 weeks	
Flying Along	Wind is moving air. Wind carries many things. Some things fly high; some fly low. A parachute slows the fall of an object that hangs from it. Engines can move something through the air. Rockets and jets move in the opposite direction from that of the escaping gases.

SOCIAL STUDIES - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HOW PEOPLE LIVE IN CITY COMMUNITIES AROUND THE WORLD	
LIVING AND WORKING IN NEW YORK CITY AND SUBURBS *pp. 3-6 Time: 16 weeks	New York City has many places of public interest. There are many reasons why so many people live and work in New York City. Geography influenced settlement and growth of the City. How New Yorkers are governed by laws and elected leaders. New York City grew up and out; New York is part of a Metropolitan Area.
LIVING AND WORKING IN OTHER CITIES IN THE UNITED STATES *pp. 7-11 Time: 7 weeks	Washington, D.C. - is the nation's capital and home of government agencies. Characteristics of Washington, D.C. are different and similar to New York City.
LIVING AND WORKING IN OTHER CITIES OF THE WORLD *pp. 11-13 Time: 7 weeks	Characteristics of San Juan, Puerto Rico that are different and similar to Washington, D.C. and New York City. Characteristics of San Francisco and Denver that are different and similar. Characteristics of Lagos, Nigeria, and Amsterdam, Holland that are different and similar.

*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 2

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HOW PEOPLE OF THE WORLD ARE BROUGHT CLOSER TOGETHER THROUGH COMMUNICATION *pp. 13-15 Time: 4 weeks	People communicate by oral language and written language. Some special ways of communicating are calendar, clock, thermometer, ruler. Inventions that improve and speed communications are telephone, telegraph, television. New York City is a great center of communications.
HOW PEOPLE OF THE WORLD ARE BROUGHT CLOSER TOGETHER THROUGH TRANSPORTATION *pp. 15-16 Time: 4 weeks	We need transportation to travel and transport goods. Science has invented ways to help us travel and send goods farther, faster,and more cheaply than ever before. Transportation has helped to make New York a great city.
PEOPLE AROUND THE WORLD OBSERVE SPECIAL DAYS AND CUSTOMS *pp. 17-18 Time: on-going	People in the United States celebrate national holidays such as Thanksgiving and Christmas. People in Lagos, Nigeria,and Amsterdam, Holland also celebrate national holidays.
WORK-STUDY SKILLS	A questionnaire is developed. Outlines are made. Key words are used in sentences. Other sources are checked to verify a fact. Fact and opinion are differentiated. A list is made. Technical terms are used . A report is defended.

CHILD DEVELOPMENT FOCUS

CHILDREN NEEDS

Basic needs, the same for all children, are the drives that influence behavior. These needs include:

1. NEED TO BE VALUED
   A child's self-image has top priority. A child can't be "somebody" unless the child is "somebody" to someone else. Self-image must be reflected in the eyes and actions of those the child loves and values. All children must be valued for who they are, where they come from, and what they bring with them from their culture, language, desires, and expectations.

2. NEED TO DO
   Children learn by using all their senses to explore, discover, and form judgments about the things in their world.

3. NEED TO SHARE WITH PEOPLE THEY TRUST AND BE TRUSTED TO SHARE
   Children need adults who care, who can guide the children's discovery into mutually respected action, who inspire and develop competence and confidence.

4. NEED TO BE GIVEN A CHANCE TO GROW AT HIS OR HER RATE IN HIS OR HER OWN WAY
   Growth for children has many dimensions - social, emotional, physical, and intellectual. Growth is uneven and highly individual. All children do not reach the same level of growth at the same age, nor does a child grow in the same way in all areas.

PRINCIPLES OF GROWTH & DEVELOPMENT

Basic principles that enable persons to guide children with a degree of assurance include:

1. DIFFERENTIATION
   Development proceeds from simple to complex. In both structure and activity, development is gradual in the direction of complexity and variety. Differentiated structures and functions become organized in new and more inclusive patterns.

2. DISCONTINUITY OF GROWTH RATE
   Development is never uniform or all at the same time. Various parts and systems grow at various rates at a different time. Growth shows characteristic spurts or peaks and then slows down to periods of relative latency.

3. INTERRELATEDNESS OF GROWTH
   Every aspect of the child's life affects every other aspect. The physical and social environment as well as factors of personality and physical development affect academic achievement.

4. DIVERSITY OF GROWTH
   No two children are exactly alike. No two grow quite alike. Wide differences exist among children of the same age, the same family, and from the same community. Each child has his or her unique growth style.

THE TEACHING ADULT SHOULD BE FAMILIAR WITH THE LEVELS OF GROWTH IN EACH AREA, WHICH MAY OR MAY NOT CORRESPOND WITH THE CHRONOLOGICAL AGE OF EACH CHILD.

CHILD DEVELOPMENT FOCUS GRADES 3 - 5

OVERVIEW: Generally includes children eight to ten years of age. Physical growth is slow and steady but social relationships and awareness of self and others are heightened. Feelings of adequacy affected by child's overall experiences in the physical, intellectual, and social spheres.

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Eight-Year-Old	Eight-Year-Old	Eight-Year-Old
• Growth is still slow and steady; (arms lengthening, hands growing larger). Permanent teeth are replacing "baby teeth." • Eyes are ready for both near and far vision; (near-sightedness may develop this year). • Interest grows in games requiring coordination of small muscles (hitting moving target, shooting marbles, catching with one hand, etc.). • Ability to write is progressing; however, fine muscle work may still be difficult and taxing.	• Prefers to work and play with others; begins to identify with group responsibilities and purposes; accepts simple rules and directions. Begins to exhibit a feeling of competition. • Is becoming more selective in choice of friends. Responds to peers in activities, dress, and ideas. • Shows allegiance to peer group rather than to the adult where there is conflict. • Is usually alert, friendly, and interested in people. The eight is often careless, noisy, and argumentative, (but not in an angry manner). • Is eager and enthusiastic about many tasks. Often tries to express ideas and to take part in activities which are beyond his or her capacity; shows more self-confidence.	• Establishes own methods of employing fundamental skills in language arts and mathematics. Is beginning to develop a broader understanding of space and time. • Is becoming more adept at defining problems and developing logical patterns of problem-solving. Is more capable of critical judgment. Weighs facts, attempts an adequate appraisal of them, and shows ability to utilize them. • Exhibits ability to distinguish fact from fiction. • Has greater capacity to accept criticism and to evaluate self-effectiveness. • Exhibits great curiosity and interest in immediate surroundings and the world: material and social.

CHILD DEVELOPMENT FOCUS GRADES 3 - 5

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
	Eight-Year-Old (Cont.) . Has growing awareness of self and others. . In school life the eight is more socially oriented than academic.	
Nine-Year-Old . Slow, steady growth continues; displays even rate of growth in height and increase in weight. Girls forge further ahead; some children reach the plateau preceding growth spurt of pre-adolescence. . Exhibits increased skill in the use of fine muscles; continues to need activities to develop large muscles. Is proficient in the use of tools and is evident in the details of his or hers finished products. . Lungs, digestive and circulatory systems are almost mature. The heart especially is subject to strain. Teeth may need straightening; first and second bicuspids are appearing.	**Nine-Year-Old** . Group and club enthusiasm is noticeable, with hostility toward other groups; clubs and exclusion from clubs are both short lived. . Is becoming aware of responsibility to others. Exhibits increased ability to evaluate self and others. Much arguing over fairness in games. . Has an emotional and intellectual interest in punishments, privileges, rules and procedures, particularly at school and in club life. . Is capable of devoting relatively long periods of time to a given task. Attacks a problem and keeps right on working at it. A nine year old feels he must answer to self as well as to others.	**Nine-Year-Old** . Has made definite growth in ability to do some independent critical thinking. . Interested in perfecting skills; will do the same task over and over again. . Is interested in the mechanics of things; what things are made of and how they operate. Tends to be more exacting in collecting, identifying, and classifying objects. . Interest in special fields increases - (science, the arts, literature, sports, etc.). May limit activities to one area.

CHILD DEVELOPMENT FOCUS GRADES 3 - 5

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Nine-Year-Old (Cont.) • Eyes are almost adult size; ready for near work with less strain. Exhibits ability to adjust eyes for both near and far vision without undue strain. Eye-hand coordination is good; hands are capable of crafts and shop work. • Displays increased skill in motor coordination. Enjoys exhibiting motor skills. Often works and plays to peak of capacity.	Nine-Year-Old (Cont.) • Is capable of more independence when away from family. Is aware of differences between standards of family and friends. • Decisive, responsible, dependable, reasonable, strong sense of right and wrong. Much time spent in talk and discussion; often outspoken and critical of adults; shows more inner control of behavior.	Nine-Year-Old (Cont.) • Likes to make plans and looks ahead; is increasing in ability to budget time. • Develops interests in a wider variety of areas involving the media -- comedians, news broadcasters, drama in general; interest in fantasy declines.
Ten-Year-Old • Girls are more mature physically than boys their own age. • Awkwardness and restlessness are common as a result of rapid and uneven growth.	Ten-Year-Old • Is generally easy going, cries very seldom, but anger may be immediate and violent. • Has a real sense of humor and a love of something funny. Tries to be humorous. Leans toward practical jokes and punning.	Ten-Year-Old • Establishes own methods of employing fundamental skills. • Is beginning to develop a broader understanding of space and time. • Is able to discuss problems, to see different sides of questions. • Exercises greater objectivity in judgment.

CHILD DEVELOPMENT FOCUS GRADES 3 - 5

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Ten-Year-Old (Cont.)	Ten-Year-Old (Cont.)	Ten-Year-Old (Cont.)
. Secondary sex characteristics begin to develop. . Approximately half the permanent teeth are developed. . Stabilization occurs in the fine motor area.	. Has a fairly critical sense of justice; is cognizant of partialities, and frequently surprises all with the judiciousness of observations. . Is open to ideas of social justice and social welfare. . Is capable of loyalities and of idol worship, and can inspire same in schoolmates without question. . May believe one hundred percent in what they have just heard on a radio program or seen on television. . Is moved one moment by a desire for the comfort of belonging, and the next by a strong urge for competition. A desire to show off and receive acclaim in the eyes of peers; prompts much classroom competition and vociferous criticism of others. Much of learning comes from association with peers. Is eager for group approval and belonging. . More accepting of self and others.	. Interested in other people's ideas. . Insights may be more mature. . May have greater capacity to accept criticism and to evaluate self.

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SCOPE AND SEQUENCE

GRADE 3

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING *pp: 37-39 Time: 6-9 Weeks Lines,Shapes and Colors	Lines,shapes,and colors are related to each other in a design or picture. Painted shapes bear likenesses to real or imagined objects. Additional lines, shapes,and colors may clarify an idea. Entire area of paper is involved in painting.
DRAWING *pp: 50-51 Time: 6-9 Weeks Basic Elements	Shapes and straight lines are elements in drawing. Familiar objects are drawn by combining different shapes. Details may be exaggerated or eliminated. Position of objects on paper shows little regard for realism. Familiar objects are named.
MODELING WITH CLAY *pp: 68-69 Time: 4-6 Weeks Form and Design	Clay forms can be combined. Forms bear likenesses to people, animals, and objects. Forms bear likenesses to imaginary figures and things. Shape, proportion, and surface treatment of forms are varied.

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*ART IN THE ELEMENTARY SCHOOLS, Grades K-6

ART - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MAKING POSTERS *pp: 78-79 Time: 4-6 Weeks Words and the Pictorial Idea	Lettered words convey a message. A word or words combined with a pictorial idea produce a poster.
USING CLOTH AND TRIMMINGS, YARNS AND FIBERS *pp: 100-106 Time: 2-4 Weeks Basic Materials Are Combined	Basic materials can be folded,pleated, and gathered. Needle, thread, and yarn are used on mesh,burlap and other materials.
CONSTRUCTING WITH WOOD AND OTHER MATERIALS *pp: 124-125 Time: 2-4 Weeks Design Construction and Fastening	Found objects are used in compact designs. Shapes are modified by tools. Constructions are pieced together with nails or glue.
BUILDING WITH BLOCKS *pp: 115-116 Time: 2-4 Weeks Structures Function In Space	Three-dimensional structures arise from combinations and arrangements of blocks. Different ways are used to bridge and enclose space. Block structures are similar to real or imaginary structures. Function is considered as part of structure.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PUPPETS AND PUPPETRY *pp: 134-136 Time: 2-4 Weeks	
Stick Puppets	Stick puppets depict real or imaginary people or animals.
Hand Puppets	Hand puppets are used for impromptu dramatization.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE	
*p. 39	Literature is created in different genres, each having identifying characteristics, e.g. short story, biography, drama, and poetry. Literature exists in varying lengths and often is read in segments. Literature exists in print and electronic media. Individual authors may have written many books with similar style, and/or similar locale and characters.
Stories *p. 348	In addition to plot and characters, stories tell about different places and historical periods.
Poetry *p. 52	The meaning of poetry is enhanced by an awareness of cadence, beat, and figurative language.
WRITING	
*p. 104	Logical development of ideas enables one to think and write clearly. Verse is an excellent medium for pupil expression and observation.
*p: 105	Factual writing is necessary to provide records, signs, labels, forms, notes, accounts of class activities.
*p. 110	Expressional writing, including letter writing, is used for expressing personal reactions, opinions, and experiences.
*p: 299	Good writing requires proofreading and revision.

* HANDBOOK FOR ENGLISH LANGUAGE ARTS GRADES THREE AND FOUR

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LANGUAGE	
*p. 135	A sentence is a group of words that belong together and convey meaning. Sentences are classified as statements, commands, questions, and exclamations.
*p. 331	Words may be spelled according to a common structual element.
*p. 334	Regular plurals are formed by adding "s".
*p. 335	Words ending in a silent e drop the e before adding ed and ing.
*p. 336	Regularly inflected verbs add s, ing and ed. An apostrophe shows the omission of a letter or letters in a contraction.
*p. 95	A dictionary is a reference book used to find the meaning, correct spelling, history and origin of a word. The Basic List of Spelling Words contains words appropriate for each grade.
SPEECH AND SPEECH ARTS	
*p. 97	The interview of a school staff mamber, visitor or community person, is an opportunity for obtaining information.
*p. 15	Choral speaking contributes toward effective interpretation of poetry and enjoyment of language.

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HEALTH EDUCATION - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CLEANLINESS AND HEALTH PROTECTION *pp. 91-94 Time: 3 hours	Germs, or microbes, are found in the air, in drinking water, in food, in and on the human body. An infectious disease is one that can spread to someone else. There are many ways of avoiding infectious disease. Sometimes it is necessary to have medical assistance to help fight germs in the body. Good health habits are an important way of keeping the body well.
NUTRITION *pp. 97-99 Time: 3 hours	A balanced diet consists of a variety of foods; these foods are in four major groupings. (Milk and dairy products; meat and fish; fruits and vegetables; bread and cereals). Other countries and peoples vary in their foods.
DENTAL HEALTH *pp. 99-104 Time: 4 hours	One's total appearance can be improved by healthy teeth. Teeth aid in the digestion of food. Having two sets of teeth is part of an individual's normal growth pattern; the first set is called the temporary and the second set is called the permanent teeth. Proper care of the teeth is necessary at all times. A well-balanced diet will help keep the teeth strong and healthy.

* HEALTH EDUCATION IN ELEMENTARY SCHOOLS

HEALTH EDUCATION - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MENTAL HEALTH *pp. 104-107 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: 2 hours	It is important to make and keep friends. People like to express their own ideas and opinions without being embarrassed or humiliated. Leisure time activities are an important part of good mental health. Everyone should accept responsibility for getting things done. Everyone at some time meets success and failure.
EYES AND THEIR CARE *pp. 107-111 Time: 4 hours	The eyes warn a person of dangers and help to avoid accidents. To avoid eye-strain take proper care of the eyes by having good lighting when reading. All children should have their vision tested at least once a year. When eyeglasses are prescribed by a doctor, they should be worn.
EARS AND THEIR CARE *pp. 115-117 Time: 3 hours	Sound waves are means of transmitting signals from one place to another. Hearing is a means of becoming aware of danger. Knowledge of the world around us is promoted through hearing.

HEALTH EDUCATION - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SAFETY AND FIRST AID *pp. 115-117 Time: 3 hours	A major cause of accidents is carelessness with regard to matches and fire. On public transportation, good manners will help to develop good safety habits. Children should not accept rides in automobiles from strangers. In case of an accident, call the police, a doctor, or another adult for help. Help an injured person by keeping them comfortable by making sure the victim has air to breathe and is not moved unnecessarily.
EXERCISE, REST, AND SLEEP *pp. 118-121 Time: 2 hours	Proper exercise is important to keep the body in good condition. Good posture is important and can be improved by proper exercise. The heart and lungs are strengthened through exercise. Proper sleep and rest helps the body in many ways.

LIBRARY-MEDIA GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ORIENTATION	Tours, diagrams, floor plans and printed signs and instructions describe library-media center resources and facilities. Publication date and/or copyright date on title page or back of title page tell approximately when the material was published or produced and/or written or revised.
ORGANIZATION	The system(s) used to classify the resources is explained. Guide words, tables of contents, indices are used to locate specific information in reference and other non-fiction books. Specific resources are located by using subject, author and title entries in the card catalog.
SELECTION	Information is obtained through browsing in reference materials.
USE	Tape recordings, 8mm loop machines and sound filmstrip viewers are operated. Characteristics of specific media and appropriateness of use are understood, e.g., 8mm film loop is continuous material and may be reviewed without rewinding. In using a book, the information on the page is constantly before the readers, helping them locate and note the key words needed for a report. Media are taken from and returned to the proper places. Simple biographies are read.
INTERPRETATION	Realistic fiction, fantasy and poetry are presented through talks and story reading. Book talks and story telling techniques are developed.

MATHEMATICS - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER: NUMERATION *pp: 17-27 Time: 12 days	Count by thousands to ten thousand Understand place value and record in expanded notation to 1000 Round numbers to nearest hundred
ADDITION *pp: 17-26 Time: 16 days	Algorithm: vertical format, two addends, sums through 999, two exchanges Column addition: more than two addends, sums through 999, with exchanges Addition in dollars-cents system Addition and subtraction as related operations Observe and use commutative and associative properties of addition
SUBTRACTION *pp: 17-27 Time 15 days	Algorithm: vertical format, regrouping minuend 1 hundred for 10 tens, 1 ten for 10 ones Subtraction in dollars-cents system Subtraction as comparison-difference, missing addend
Multiplication *pp: 18-28 Time: 30 days	Basic facts Algorithm: horizontal format and vertical format, number named by 2-digit numeral multiplied by number named by 1-digit numeral, with and without exchange Observe and use the commutative property of multiplication, the distributive property of multiplication over addition, the role of 1 and 0 in multiplication
DIVISION *pp; 18,19,22-27 Time: 19 days	Basics facts Algorithm: vertical format,divisors 1 - 9, dividends 99 or less

MATHEMATICS: GRADE 2, GRADE 3, Scope and Sequence, Curriculum Bulletin, 1967-68 Series, No. 21

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MATHEMATICS - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FRACTIONAL NUMBERS *pp: 22,23,24,28 Time: 7 days	Concept: sixth, eights of a whole Find $\frac{1}{6}$, $\frac{1}{8}$ of a number of things Equivalence: halves, thirds, sixths halves, fourths, eights
GEOMETRY *pp: 20,24,28 Time: 4 days	Concepts: curve, closed curve, simple closed curve, polygon Properties of plane figures; quadrilateral, rectangle, square triangle Line Symmetry
MEASUREMENT *pp: 17,18,21,23,25,27,28 Tiem 15 days	Linear: yard, centimeter, decimeter, meter Capacity: gallon, liter Weight :fractional parts of gram, kilogram (mass) ; pound Time: clock - 5 minute intervals, A.M., P.M. calendar - number of weeks in month, writing date month/day/year Temperature: above and below zero degrees, Celsius scale Speed: non-numerical comparison of time and speed
OTHER CONTENT INCLUDED *pp: 17,20,24,25,28,29 Time: 10 days	Concepts from sets, algebra, and probability; problem solving and reasoning

MUSIC - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
RHYTHM	
Reading Rhythm Notation	Rhythm notation is written through the use of meter signatures (4/4, 3/4, 2/4); bar lines and measures. The meter signature conveys rhythm information important to the music, e.g., the top number of the meter signature denotes the number of beats in each measure. Tempo markings are the composers way of conveying the speed of music, e.g., Allegra-fast, Lento -slow)
SINGING *p. 61-63	A song is medium for many musical learnings.
Vocal Techniques	Attention to vocal techniques will lead to quality singing. Some early vocal techniques are: breath support, diction and long sustained tones. Folk songs can be added to the repetoire of songs.
LISTENING * p. 73-75 Direct Listening	The listening experience is enhanced by specific listening direction , e.g., awareness of voice qualities, different musical instrument qualities, timbres, textures and style.
CREATIVE EXPERIENCES	
Sound Scores	Soundsaround us can be scored through pictures.
Accompaniment	The dramatic effect of poetry and stories can be heightened by improvised rhythm instrumental accompaniment.
MUSIC READING * p. 83	
Hand Signals	The Kodaly hand signals which denote pitch, help children to "feel" pitch.

*MUSIC IN THE ELEMENTARY SCHOOLS
LEVELS I - II

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PHYSICAL EDUCATION - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
SELF-TESTING ACTIVITIES *pp. 179-182	Bicycle	Jumping Frame Activities
	Caterpillar Walk	Monkey Walk
	Emergency Jump	Pony Jump
	Hop Scotch	Stair Climbing
	Human Wicket	The Top
DANCES *pp. 183-201	**Skill**	**Dance**
	Quick, Long	Agido**
	Knee, Raise, Point, Jump Turn	Alley Cat
	Step, Hop	Bleking**
	Forward & Pass Through	Come Let Us Be Joyful**
	Toe-Heel-Hops	Csardas
	Elbow--Swing	Cshebogar**
	Social Dance Position	Glow Worm**
	Two Step	Greek Circle Dance
	Arch	Gustaf's Skol**
	Hop With Heel Placing	Hora Arabi
	Toe-Heel	Indian Dance (Prayer for Rain)
	Skip, Wheel, Swing, Cart-Off	Long Eight**
	Allemander Left/Right	Oh, She's Gone, Gone
	Run, Step-Hop	Seven Steps**
	Do-Se-Do Promenade	Sisters Form a Ring**
	Do-Se-Do, Sashay	Virginia Reel
GAMES WITHOUT EQUIPMENT *pp. 202-207	**Skill**	**Dance**
	Imaginative Play	Animals
	Counting	Circle Number Change
	Running, In/Out	Follow and Chase
	Leadership, Self-Image	Follow the Leader
	Directional, Odds/Even	Odds and Evens
	High/Under	Squirrels in Trees
	Running	Stoop Tag
	Dodging, Running	Three Deep

*PHYSICAL EDUCATION PRE-K - 6

**Basic Dances for Grade 3

PHYSICAL EDUCATION - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
	Skill	Game
GAMES WITH EQUIPMENT **pp. 208 - 215	Running, Turning	All-Up Relay
	Throwing, Basket-Shooting	Circle Target Toss
	Punch Ball-Lead Up	Hand Bat Ball
	Throwing, Keeping Score	Hit the Object
	Baseball Lead-Up	Long Ball
	Passing, Catching & Counting	Pass and Count
	Agility Running	Serpentine Relay
TUMBLING *P. 216	Series of Forward Rolls	
	Backward Roll	
	Backward Roll with Variation	

SCIENCE - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ELECTRICITY IN EVERYDAY LIFE *pp: 27-40 Time: 5 weeks	
Electricity Around Us	Electricity does many jobs for us. Electricity gives us light, sound, heat, and motion.
Electricity Travels in a Circuit	A dry cell is a source of electricity. A switch will open or close a circuit. Metals conduct electricity; non-metals do not. Poor conductors can be used as insulators.
THE EARTH AND THE SUN *pp: 41-53 Time: 6 weeks	
Night and Day	The earth is round and it rotates every 24 hours causing night and day. In one year the earth moves around the sun.
Telling Time	The earth's steady turning makes it a clock. Clocks and watches are run by various methods. Today's clocks are more accurate than those of the past.
THE NEEDS OF PLANTS AND ANIMALS *pp: 54-74 Time: 6 weeks	
Needs of Plants	Green plants need light, water, air, proper soil, and correct temperature to grow.

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*SCIENCE - GRADE 3-4, #11 - 66-67 Series

SCIENCE - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	The amounts they need vary. Each part of the plant helps it to live and grow.
Needs of Animals	All animals need food, water, air, and shelter. Each kind of animal feeds, moves, and protects itself in its own way.
HOW SOUNDS ARE MADE *pp: 75-90 Time: 5 weeks	
Sound and Vibrations	Musical sounds are made by plucking, striking, blowing, and rubbing. Sound is produced only when something vibrates.
OBSERVING AND MEASURING WEATHER CHANGES *pp: 91-114 Time: 7 weeks	
Temperature	Temperature changes from day to day and is measured in degrees with a thermometer. The liquid in the thermometer expands when it is warm and contracts when it is cool.
Wind Direction	Wind direction may be detected by observing smoke, trees, flags, and clothes on a line. Wind direction is measured with a wind vane and is named in the direction from which it blows. Wind speed is measured with an anemometer.

SCIENCE - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Rain, Snow, and Water Vapor	Rainfall may be measured by collecting rain in a jar. Snowfall is measured with a ruler. Air contains invisible water vapor that evaporates into the air from wet surfaces. Humidity changes from day to day.
FRICTION, GRAVITY AND MOTION *pp: 115-133 Time: 6 weeks	
Friction Affects Motion	When surfaces rub against each other, there is friction between them. Friction is decreased by using lubricants, rollers, wheels, and bearings. Friction is increased by making surfaces rougher. Sometimes friction helps us.
Gravity Affects Motion	Going up means going away from the center of the earth, and going down is toward the center of the earth. The earth's gravity exerts a pull on all objects and will slow up objects going up and increase the speed of objects going down.
ROCKS AND HOW WE USE THEM *pp: 134-154 Time: 5 weeks	
Rocks We Use	Natural and synthetic rocks are used for buildings because of their properties.

SOCIAL STUDIES - GRADE 3

CONTENT AREA AND TOPIC

CULTURES AROUND THE WORLD: CULTURAL AND GEOGRAPHIC RELATIONSHIPS

Case Studies are Selected From Five Geographic Regions:

HOW PEOPLE LIVE IN THE DESERT
*pp. 7-11
Time: 6 weeks

HOW PEOPLE LIVE IN THE TROPICAL RAINFOREST
*pp. 12-18
Time: 6 weeks

HOW PEOPLE LIVE IN GRASSLANDS
*pp. 19-25
Time: 6 weeks

HOW PEOPLE LIVE IN NORTHERN FORESTS
*pp. 26-32
Time: 6 weeks

HOW PEOPLE LIVE IN MOUNTAIN REGIONS
*pp. 33-38
Time: 6 weeks

SKILLS AND KNOWLEDGE

Note:

This course of study introduces young learners to the characteristics of a particular geographic region. To develop insights into the ways in which men respond to natural conditions, pupils undertake case studies of two cultural groups presently living within similar geographic regions.

The case studies developed in this grade have been selected to present a variety of ethnic and cultural groups. Nevertheless, they should not be regarded as prescriptive. They are simply examples of what might be done in terms of overall objectives of the course of study. It is quite possible, and even desirable, for the teacher to select other cultural groups for study within each theme.

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*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 3

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HOW PEOPLE LIVE IN GRASSLANDS (Sample of a Case Study Approach:) Basic Geographic Features	Short grasslands or steppes are found in the middle latitudes with little rainfall. (e.g., the Great Plains of North America, the Steppes of Eurasia). Tall grasslands, or praires are found in the middle latitudes where there is an abundance of rainfall (e.g., Central North America, Northeast Argentina, Western Soviet Union). Tall grasslands, called Savannas, are found in the low latitudes where there is a long dry period. This vegetation covers more of Africa than any other type. Grasslands in the middle latitudes are regions of agriculture where grain crops are grown.
People of the Argentine Pampas	A large portion of Argentina lives on the Pampas; the Pampas have praire vegetation ("Pampas" is the Spanish word for treeless, grassy plains).
Historical Background	People from Spain settled Argentina after the time of Columbus. The people are largely European in background; the population includes members of various racial and ethnic groups who emigrated in the 19th and early 20th Centuries.
Family Life	The people of the Pampas have a way of life similar to that of the American West; gauchos (cowboys) "live on horseback" and perform a variety of tasks.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Securing Basic Family Needs	Principal foods are vegetables, dried beef, dairy products and coffee. Bunk houses and cottages are usually made of adobe (sun-dried) brick. Farm workers and their families live in small houses. Men and women wear clothes similar to American Westerners; gaucho-style clothing include sombreros, boots, wide-legged trousers, leather belts with silver buckles, and ornamented shirts.
Government	Owners of the estancias (large ranches) make rules and regulations for their employees; the Argentine government and the provincial governments provide laws and services for the people of the pampas. The national government owns and operates many important industries: meat-packing plants, steel mills, etc.
Religion	About 85 per cent of the people are of the Roman Catholic faith.
Education	The government operates free schools in villages, towns, and cities; 90 percent of the people know how to read and write.
The Arts	Objects of leather and silver are decorated and sold. Music is played on a variety of instruments, including the guitar; folksongs are popular.
Language and Literature	The written and spoken language is Spanish.
Agriculture	Cattle-raising is the principal occupation; grain growing (wheat and corn) and the production of dairy foods have increased in recent years.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Industry	Many industries use the by-products of the meat processing plants to manufacture such goods as soap, tallow and perfumes. Dried and salted meats are the principal exports.
Transportation and Communication	The government owns and operates railroads. Airplanes are frequently used for local travel. Automobiles and small trucks are sometimes used in the herding and driving of cattle. Horseback is the principal mode of transportation for the gaucho.
Major Problems	There is a need to improve the living standards; people can use only a small part of the things they produce (grain and livestock) and must import many things (fuel, machinery, clothe, etc.) There is a shortage of labor. The income of the people is affected by world market prices for beef and grain.

WORK-STUDY SKILLS

Graphs, tables, and charts are interpreted.
Glossary is used to look up terms studied.
Dictionary is used to look up meaning of words studied.
Index is used to locate information in a book.
Encyclopedia is used to find information.
A sample outline is used for main topics and sub-topics.

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SCOPE AND SEQUENCE

GRADE 4

ART - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING *pp: 37-39 Time: 9-12 Weeks The Composition of the Picture or Design	Pictures or designs have important and less important parts. Color exists in many combinations. Contrast is produced by light and dark,by plain and textured areas.
DRAWING *pp: 52-53 Time: 6-9 Weeks The Relationship of Objects	Objects relate to each other in space as separate objects on a base line, as separate objects at different levels,and as separate objects around a central shape.
The Representation of Reality	Variations in shapes and details express visual ideas. Color is an important part of reality. Realism requires close observation. Close observation produces a strong visual memory.
MODELING WITH CLAY *pp: 69-70 Time: 6-9 Weeks The Form and Its Construction	Size,shape,and type of construction determines the form of a clay model. Lump,coil,and slab are three types of construction.

*ART IN THE ELEMENTARY SCHOOLS, Grades K-6

ART - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WORKING WITH PAPER *pp: 91-92 Time: 2-4 Weeks	
Arrangement and Construction	Constructions are made from different sizes and colors of paper that are suitable for constructions. Trial arrangements or constructions are made from newsprint or newspaper. Constructions are made by cutting,folding,rolling,and fastening parts together.
Design and Durability	Suitable ways of joining pieces make construction durable. Color enhances the design.
BUILDING WITH BLOCKS *pp: 115-116 Time: 2-4 Weeks	
Structures Reflect Experience	Trips,films,stories,and learning in other subject areas contribute to ideas for building structures. The design of a structure can be modified to reflect personal observation and imagination.
PUPPETS AND PUPPETRY *pp: 136-137 Time: 4-6 Weeks	
Materials and Design	Paper bags,cloth,and socks are suitable materials for original puppets. Heads,features,and costumes can vary in size,shape,proportion, and color.
Characterization	Characterization is created by the emphasis given to head and features, and a distinguishing costume accessory. Manipulation of puppet is coordinated with free dialogue.

ART - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
USING CLOTH AND TRIMMINGS,, YARNS AND FIBERS *pp: 100-106 Time: 4-6 Weeks	
The Pattern and the Decorative Article	Pattern determines the size,shape,and construction of the article. Decorative articles are stitched,woven,or hooked. Basic materials are decorated with trimming,stitchery,and applique.
The Simple Loom	Article to be woven determines the size and proportion of a simple loom. Amounts of color and texture for woven article are relative.
CONSTRUCTING WITH WOOD AND OTHER MATERIALS *pp: 124-125 Time: 4-6 Weeks	
Planning Construction	Construction depends upon available materials. Construction is made interesting by selection and arrangement of pieces. Patterned and textured surfaces make construction interesting.
MAKING POSTERS *pp: 79-80 Time: 4-6 Weeks	
Communication and the Pictorial Symbol	Words and original picture or pictorial symbol communicate a message. A unified design is made from the arrangement of words and a pictorial idea.
Lettering and Design	Form and spacing of letters determine legibility. Colors dramatize an idea.

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ENGLISH LANGUAGE ARTS - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE	
Poetry	
*p. 350	In poetry the poet juggles the sequence for emphasis. Poetry makes wide use of comparisons (metaphors and similes). Poetry uses repetition of sounds, assonance, alliteration. Poetry employs words where the meaning is suggested by the sound (onomatopoeia).
*p. 351	Free verse is poetry without regular rhyme or meter. A popular form of unrhymed verse is Japanese Haiku, a poem of 17 syllables divided into three lines of five, seven, and five syllables.
Prose	
*p. 345	Historical fiction deals with historical events and/or fictional characters.
*p. 347	Biographies are true stories based on real events and real people.
*p. 348	Good characterization depends on the degree to which characters are true to life.
WRITING	
*p. 272	A paragraph is a group of sentences of related ideas. An opening sentence is important in introducing the subject and arousing the reader's interest.
*p. 274	Writing stories or reporting an event makes use of chronological order.
*p. 301	Proofreading is a complex skill that involves the recognition of errors and the ability to connect them.

* HANDBOOK FOR ENGLISH LANGUAGE ARTS GRADES THREE AND FOUR

ENGLISH LANGUAGE ARTS - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
*p. 147	Cursive writing is the conventional form of script in which letters are joined and words are separated.
LANGUAGE	
*p. 306	English is a word-ordered language; changes in word order affect meaning.
*p. 324	Words are divided into as many syllables as they have vowel sounds. The Basic List of Spelling Words contains words appropriate for each grade.
*p. 327	Some plurals are formed by adding s, es; changing y to i and adding es; changing to a new word.
SPEECH AND SPEECH ARTS	
*p. 15	The play uses dialogue to interpret character and develop the plot.
*p. 251	Telephone conversation has certain conventions of answering, identification, clear message giving, and brevity for proper use.
*p. 253	Effective discussion has purpose, direction, opportunities for participation by all.
*p. 254	Reporting involves the use of an inviting opener, vivid details and examples, organization, and clear delivery.
*p. 206	A repertoire of familiar stories provides knowledge of a common heritage and shared varied experiences.
*pp. 210 - 221	Memorization of poetry stimulates enjoyment and sensitivity to language.
*p. 264	Role playing is a method for better understanding of situations.

HEALTH EDUCATION - GRADE 4

CONTENT AREA AND TOPIC	
CLEANLINESS AND HEALTH PROTECTION *pp. 122-126 Time: 3 hours	Some diseases are caused by germs. The word germ refers to a certain kind of microbe. Bacteria is a kind of germ that may cause disease. A virus is a kind of germ that may cause disease. Disease-producing germs may enter the body by various means. Sneezing and coughing can cause germs to spread. It is important to cover one's mouth when coughing or sneezing. The body is assisted in fighting disease germs by immunizations. Certain drugs given by physicians help the body fight disease germs and control infection.
NUTRITION *pp. 131-135 Time: 4 hours	Most foods that supply our body needs are divided into four basic groups. Foods from the four basic groups should be included in the daily food plans. A good breakfast is very important; fruit, egg or cereal, buttered toast, and milk will give you a good start for the day. A good lunch is one that is well-balanced. Dinner is an important meal of the day. Snacks should include foods that promote good health. It is important for growing children to refrain from drinking tea and coffee as substitutes for nutritious food.

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* HEALTH EDUCATION IN ELEMENTARY SCHOOLS

HEALTH EDUCATION - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DENTAL HEALTH *pp. 135-138 Time: 4 hours	One of the functions of teeth is to assist with the digestion of food in the chewing and breaking up of the food. It is important to visit the dentist periodically. There are government agencies that will help those who find it difficult to pay for the services of a dentist. Fluoridation involves adding a chemical to water; using fluoridated water reduces dental decay.
MENTAL HEALTH *pp. 138-145 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: 5 hours	There are many ways to make new friends; e.g., respecting and accepting others. Children should work together cooperatively at school. People differ from other people in many respects. It is important to understand why there are rules and laws.
EYES AND THEIR CARE *pp. 145-149 Time: 3 hours	The structure of the eye is similar to the structure of a camera. The eyes are delicate and require good lighting. It is important to give the eyes proper care and adequate rest. People who wear glasses when they need them are safeguarding their eyes.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
EARS AND THEIR CARE *pp. 150-154 Time: 4 hours	The ears are the organs of the body which make it possible for people to hear. The ears are composed of three parts: the outer ear, middle ear, and inner ear. It is important to take proper care of the ears so that they can function properly. The outer ear should be washed with soap and warm water and rinsed with clear warm water. Excessive wax in the ear should be removed by a doctor. To protect the ears, one should blow the nose properly. Injury may cause damage to the ears; avoid very loud sounds, and avoid putting anything into the ears.
SAFETY AND FIRST AID *pp. 154-160 Time: 3 hours	Carelessness is frequently a factor contributing to accidents. Accidents often happen because someone is in a hurry or discourteous. Accidents can be prevented in classrooms, at home, and outdoors by following safety rules. There are safety rules to be followed at home, in classroom, outdoors, and on public transportation. First aid procedures are necessary in times of emergencies.
EXERCISE, REST, AND SLEEP *pp. 160-163 Time: 3 hours	Proper exercise is necessary for maintaining good health.

HEALTH EDUCATION - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
EXERCISE, REST, AND SLEEP	Muscles are kept in better condition if they are properly exercised. Sleep is an important health requirement for all people.
ALCOHOL, TOBACCO, AND SUBSTANCE ABUSE *pp. 164-167 Time: 3 hours	Drinking alcoholic beverages may cause drunkenness. It is illegal for children to be served alcoholic beverages. It is better for growing boys and girls to drink milk and fruit juices than alcoholic beverages. All people should refrain from using tobacco. Tobacco, which contains nicotine and tars, affects the lungs and blood vessels. The inhalation of the fumes of non-medicinal substances is a dangerous practice.

LIBRARY-MEDIA GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ORIENTATION	Vertical file contains ephemeral material arranged by subject.
ORGANIZATION	Cross references in the card catalog and reference books are used to locate additional material on the subject under consideration. Dewey Decimal system arranges materials according to subject.
SELECTION	Correct books and audiovisual materials are chosen to find information on specific topic. Correct encyclopedia volume is selected to find specific information.
USE	Encyclopedias are used to get an overview or summary of a subject. The arrangement, e.g., alphabetical or subject, of standard encyclopedias, is understood. The comparative value of given standard encyclopedias for varying subjects is understood, e.g., geographic coverage of World Book. The foreword, preface, appendix and glossary are used to understand the approach of the author and the extent of the coverage on the topic of the book. Pictures and filmstrips are used to find specific information.
INTERPRETATION	Practice is given in skimming to find a name, date, phrase, fact or idea. Realistic fiction, fantasy and poetry, and biographies are presented through book talks, story telling and story reading.
PRODUCTION	Model book with title, author, publisher, table of contents, copyright date is constructed.

MATHEMATICS - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER; NUMERATION *pp:3,4,5,9,12,15,18 Time: 20 days	Place value through hundred-thousands; record numerals in expanded notation; read and write numerals through hundred-thousands Round numbers to nearest ten-thousand; to nearest dollar Roman numerals L, C
ADDITION AND SUBTRACTION OF WHOLE NUMBERS *pp: 5,9,10,12,15 Time: 23 days	Standard algorithm for computing sums, two or more addends, numbers in the ten-thousands and beyond Observe and use properties of addition Standard algorithm for computing differences Addition and subtraction in dollars-cents system
MULTIPLICATION OF WHOLE NUMBERS *pp: 6,7,9,11,13,14,15,17, 18,19,20 Time: 26 days	Algorithm: horizontal and vertical format, numbers in the thousands and beyond multiplied by a number less than 10, with and without exchange Use commutative property of multiplication; the distributive property of multiplication over addition Multiplication in dollars-cents system
DIVISION OF WHOLE NUMBERS *pp: 7,8,10,12,14,15,17 Time: 22 days	Algorithm: vertical format, dividends-numbers in the thousands and beyond; divisors-numbers less than 10 Division in dollars-cents system One as a divisor and zero as a dividend

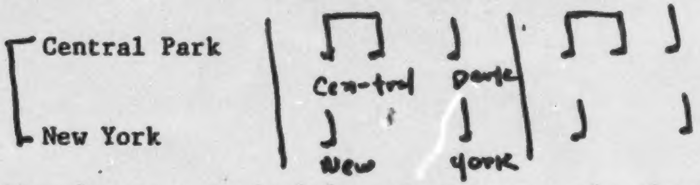
MATHEMATICS: GRADE 4, GRADE 5, Scope and Sequence, Curriculum Bulletin, 1969-70 Series No. 8

MATHEMATICS - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FRACTIONAL NUMBERS *pp: 6,8,9,10,13,15,16,17 Time: 37 days	Concept: fifths, tenths,ninths, and twelfths of a whole Algorithms: finding unit and non-unit fractional parts of numbers Algorithms: computing sums and differences of fractional numbers expressed with like and related denominators, horizontal and vertical format Algorithms: multiplication of fractional numbers by a whole number Observe and use properties of operations
GEOMETRY *pp: 3,11,14,16,18 Time: 6 days	Concepts: line segments in a circle; perimeter; circumference as a perimeter Properties of space figures: cone, cylinder, cube, sphere
MEASUREMENT *pp: 6,8,13,14,16,18,19 Time: 12 days	Linear: quarter-inch; eighth-inch; mile; perimeter of rectangle, meter, centimeter, millimeter, kilometer Weight: ton, metric ton; volume; liter, milliliter Time: Clock - seconds; number of seconds in a minute; record time as 3:06 P.M. Calendar - relationship between number of days in a year, in a leap year; number of weeks in a year Temperature: freezing point; boiling point, Celsius scale Concept of speed and frequency as rate
ALGEBRAIC CONCEPTS *pp: 4,17,19 Time: 5 days	Solution set for relationship such as $\square > 4$ and $\square < 10$, when replacement set is set of whole numbers Graph: number on a line solution set of an open sentence with one place holder (variable) Tabulate solutions of open sentences Write open sentence to describe relationship between two variables shown in table

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
STATISTICS AND PROBABILITY *pp: 15, 19 Time: 9 days	Interpret circle graphs when sectors represent the same unit fraction Interpret and construct bar graphs Concept of mean (average) Coin tossing: one coin - tabulate results of several tosses express probability as a fraction

MUSIC - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
RHYTHM *p. 55-59	Word patterns are related to rhythm patterns, e.g. Central Park Interesting word phrases help create rhythm patterns. Musical instruments are used to perform rhythm patterns. More than one rhythm pattern can be performed at the same time. 
SINGING *p. 61	The song is the medium for many musical learnings, e.g., the phase, mood, forum, harmony.
Musical Learnings The Round	Two part singing is easily introduced with the "round". Hand signals for pitch (Kodaly) are used to develop interval awareness, (thirds, fifths).
LISTENING *p. 72	
Tonality	A tonal center is present in most songs (key). Most traditional songs are written in the "major" or "minor" mode. Different composers wrote in different modes.
INSTRUMENTAL MUSIC	
Improvisation	The creative experience begins with free improvisation. Musical instruments and the voice can improvise to songs, poetry, stories, recordings.

*MUSIC IN THE ELEMENTARY SCHOOL LEVELS I - II

MUSIC - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Melody Instruments	Melodies and harmony are performed on the xylophone, metalophone and the recorder. The recorder is a musical instrument which leads to the playing of orchestral instruments.

PHYSICAL EDUCATION - GRADE 4

CONTENT AREA AND TOPIC

SKILLS AND KNOWLEDGE

SELF-TESTING ACTIVITIES
*p. 220

- Back Stand and Sit
- Beer Dance
- Human Rocker
- Jumping Jack
- One-Legged Hop
- Single Squat
- Tailor Squat
- Weather Vane

DANCES
*p. 222

Skill

- Swaying & Clapping
- Two Step
- Leg Squats
- Square Dance Formation
- Right/Left Hand Star
- Allemande Left/Right, Grand Right/Left
- Hop & Head Touch
- Square Formations
- Balance, Circle Left/Right
- Change Partners, Slide
- Balance, Circle

Dance

- Adawe**
- Badger Cavotte
- Banga**
- Cumberland Square**
- Green Sleeves**
- Lady Round the Lady

- La Raspa**
- Life on the Ocean Wave
- Marching Through Georgia
- Pattycake Polka**
- Pop Goes the Weasel

GAMES WITHOUT EQUIPMENT
**pp. 223-246

Skill

- Walking
- Teamwork
- Various Locomotor Skills
- Arm Strength
- Running & Changing, Direction
- Agility & Number Recognition

- Flying Dutchman
- Fox & Geese
- Freeze
- Keep Away
- Maze Tag
- Numbers Change

GAMES WITH EQUIPMENT
**pp. 247-256

Skill

- Ball Handling
- Running & Agility
- Throwing, Running, Catching
- Agility
- Volleyball Lead-Up

- Arch Ball Relay
- Around an Object Relay
- Center Base
- Club Snatch
- Deck Tennis

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*PHYSICAL EDUCATION PRE-K - 6

**Basic Dances for Grade 4

PHYSICAL EDUCATION - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
	Skill	Game
GAMES WITH EQUIPMENT **pp. 247-256	Throwing & Agility	Dodge Ball
	Baseball & Soccer Lead-up	Kick Ball
	Punch Ball Lead-up	Overtake Punch Ball
	Baseball Lead-up	Punch Ball
	Handball Lead-up	Wall Ball
INDIVIDUAL, DUAL, TEAM SPORTS *pp. 262-268		
BOX BALL	Hand-Eye Coordination, Batting	
HANDBALL	Rules, Serve & Return	
MODIFIED BADMINTON	Rules, Serve & Rally	
PADDLE TENNIS	Rules, Serve & Rally	
TRACK	Standing Start, Crouch Start	
GYMNASTICS *pp. 257-258		
Tumbling	Hand Stand with Assistance Hand Stand and Forward Roll Head Stand	
Apparatus *pp. 257-261	Balance Beam - Walk Forward, Backward Peg Board - Climbing with Hip Support - Climbing without Support Ropes - Climbing - Back Lying to Sitting Position - Back Lying to Standing Position (without bending knees) - Hanging - Spotting Swedish Box - Jumping on Box: Front, Left, Right - Vaulting: Standing Front Squat	

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FINDING DIRECTION WITH A COMPASS *pp: 157-173 Time: 4 weeks	
Find the Way Home	Landmarks help us find our way. A map represents an area of the earth and shows facts about that area. The sun's position at different times of the day gives us direction.
Finding the Way With a Compass	A compass tells direction. One end of a compass needle points in a northerly direction. We can make a compass by rubbing a steel needle on a magnet.
The Earth As a Compass	A freely swinging magnet may be affected by iron or steel nearby. Unlike poles of magnets attract each other, like poles repel each other. The earth behaves like a magnet and attracts compass needles. The earth's magnetic poles are not the same as its geographic poles.
OUR NEAREST NEIGHBOR IN SPACE: THE MOON *pp: 174-193 Time: 7 weeks	
Seeing the Moon	Moonlight is reflected sunlight. The moon seems to change its shape and shows dark and light areas on its surfaces, mountains, and plains. The moon is 1/4 the diameter of the earth.
Distance of the Moon From the Earth	The moon is about 30 "earths" away from the earth. The moon is the nearest astronomical body to the earth. The moon looks small because it is far from the earth.

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*SCIENCE - GRADE 3-4, #11 -66-67 Series

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Man On the Moon	Moon probes discover many facts about the moon. Man must take his own environment with him to the moon because there is no air, water, or food on the moon. The temperature on the moon varies from extreme cold to extreme heat. The moon has less gravity than the earth.
Eclipses of the Moon and Sun	An eclipse of the moon occurs when the earth blocks off the light of the sun. An eclipse of the sun occurs when the moon blocks off the light from the sun.
GETTING NEW PLANTS *pp: 194-205 Time: 6 weeks	
New Plants From Seeds, Leaves, Stems, and Roots	New plants come from seeds that are scattered in different ways to suitable surroundings. In some plants a new plant may be started from roots, stems, or leaves.
SOUNDS TRAVEL: SOUNDS CAN BE RECORDED *pp: 206-224 Time: 5 weeks	
Sounds Are Carried By Air and By Other Materials	Sounds travel from one place to another through air, water, and solids.

SCIENCE - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Sounds can be controlled. Sound can be reflected from a surface. Sound travels more slowly than light. An echo is reflected sound.
Sounds Can Be Recorded for Future Use	Sounds are preserved by impressing their vibrations onto a turning record. The vibrations carve wavy grooves in the record which, when the record is played, cause a needle to vibrate and reproduce the sound.
WEATHER AND CLIMATE FROM SEASON TO SEASON *pp: 225-254 Time: 7 weeks	
The Seasons	New York has a yearly cycle of 4 seasons: autumn, winter, spring,and summer; each one with its own temperature. For each season the average temperature is determined by the number of hours of daylight and the angle at which the sunlight strikes the earth. Rays of sunlight which strike the earth directly warm it more than rays which strike it at a slant.
Varieties of Weather in New York City	New York City has a great deal of "unusual" weather. New York City experiences lightning, thunderstorms, hail, ice storms, fog, hurricanes, blizzards, haze, cold waves, heat waves, and drought. A rainbow may occur after a rain.

SCIENCE - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MOVING THINGS MORE EASILY *pp: 255-276 Time: 6 weeks	
Machines With Wheels Help Move Things More Easily	Wheels are found in many machines. The pulley, gear and wheel, and axle make it easier to move things.
Ramps Help Lift Things More Easily	Ramps are used to lift things more easily and to slow the speed of objects moving downward.
Levers Help Move Things More Easily	With some levers, less force is needed to move objects and objects may be made to move faster.
THE WATER WE USE *pp: 277-300 Time: 4 weeks	
The Water We Drink	Our water is collected outside our city from watersheds. Aqueducts bring the water from distant reservoirs. Drinking water tastes good and is free from germs. Water must be conserved.
Bodies of Water in New York City	Many kinds of bottom plants and animals live in or near water near New York City. Moving water changes the surrounding land.

SOCIAL STUDIES - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
AMERICAN PEOPLE AND LEADERS: HOW THE UNITED STATES BEGAN AND GREW	
HOW PEOPLE DISCOVERED AND EXPLORED THE AMERICAS *pp. 4-5 Time: 4-5 weeks	Our first immigrants came thousands of years ago from Asia. Knowledge was acquired by Europeans from the Indians. America was rediscovered by other European explorers almost five hundred years after the Vikings.
HOW PEOPLE SETTLED AND DEVELOPED COLONIES IN NORTH AMERICA *pp. 5-6 Time: 6-7 weeks	Indian, Spanish, French, English and Dutch made settlements.
HOW PEOPLE ESTABLISHED THE UNITED STATES OF AMERICA *pp. 7-8 Time: 6-7 weeks	Many people helped lead the colonists into the Revolution. Many people helped lead the fight against the British. Many leaders helped found our government.
HOW PEOPLE DEVELOPED OUR NATION (TO 1900) *pp. 8-10 Time: 9-10 weeks	The nation expanded from shore to shore. People of many lands contributed to the industrial, scientific, economic and artistic development of the United States. Many people worked for human dignity and to improve social conditions. Many people led the fight for civil liberties. Many people helped to develop modern science and industry. Many people have been leaders in government, arts, national defense, fight for freedom.

*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 4

SOCIAL STUDIES - GRADE 4

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HOW PEOPLE HAVE BEEN LEADING US INTO OUR PRESENT SOCIETY *pp. 10-12 Time: 8-9 weeks	People of many ethnic groups have contributed to our economic, political, and cultural life.
WORK STUDY SKILLS	Parallels and medians are used to locate places on maps. Road maps are used to chart directions and to learn map symbols. Outerspace maps are used to identify contours and shapes of land masses. A preface is used to show the author's intention and purpose. Picture and clippings files are used for reports. An Atlas and World Almanac are used to find information. The Card Catalog is used to locate books in a library. Sources of information in a report are identified. Emotional words in a paragraph are identified. Main points in a paragraph are distinguished. Events are placed in proper sequence. Topics are defined. Topic sentences are used in homework and tests. Conflicting views and statements are presented in a discussion. Reading materials are skimmed and summarized.

SCOPE AND SEQUENCE

GRADE 5

328

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING *pp: 39-41 Time: 9-12 Weeks The Near and Far in Space	Overlapping shapes in a painting express near and far relationships. Contrasts in light,dark,color,and textures make overlapped parts clear. Different colors appear to advance or recede.
Expressive Use of Color	A wide variety of color tones can be made from any one color. The combination of color tones in a painting shows sensitiveness. Observed characteristics are rendered by expressive use of color.
DRAWING *pp: 54-57 Time: 9-12 Weeks Expressing the Near and Far	Near and far relationships are represented by drawing objects in front of or behind one another. Contrasts of light and dark, plain and textured areas make visible parts of overlapped forms clear. Relative importance of things in space is determined by their size,shape,color, and position. Realism is established by integration of observing,thinking and expressing.

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*ART IN THE ELEMENTARY SCHOOLS, GRADE K-6

ART - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MODELING WITH CLAY *pp: 71-73 Time: 4-6 Weeks Form and Construction	The construction of an expressive form is planned. Complex forms often combine two or more types of construction. The design or surface treatment of a clay form can be modified to make a more interesting object.
MAKING POSTERS *pp: 80-81 Time: 2-4 Weeks Pictorial Symbols and Dramatic Effect	Pictorial symbols and appropriate words dramatiza an idea in concise form. Changes in emphasis are produced by adjustment of sizes and placement of symbols and of word areas. Dramatic effect is achieved through use of a limited number of colors.
WORKING WITH PAPER *pp: 92-93 Time: 2-4 Weeks Three-Dimensional Construction as Process	A three-dimensional paper or cardboard article requires a working sketch or trial construction. Constructions are made through a combination of measuring, folding, cutting, rolling, fitting, and fastening. Improvements in design or construction are made as work progresses.

ART- GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
USING CLOTH AND TRIMMINGS YARNS AND FIBERS *pp: 106-109 Time: 4-6 Weeks	
Making the Article	Article to be made requires a working sketch or pattern. A combination of measuring,cutting,fitting,stitching,weaving, or hooking is used to make a cloth,woven,or hooked article. Design and construction modifications are made as work proceeds.
CONSTRUCTING WITH WOOD AND OTHER MATERIALS *pp: 125-126 Time: 4-6 Weeks	
The Design and Control of the Material	Wood or other construction requires pattern or working sketch. Selection of materials from a wide assortment of shapes and linear elements is required. Adjustments to improve design and construction are made as piece is crafted. Appropriate tools are necessary for control of material.
PUPPETS AND PUPPETRY *pp: 137-139 Time: 4-6 Weeks	
Characterization	Importance of individual puppets is a function of size,color, and expressive characterization.
Heads	Puppet heads are devised from ready-made forms such as boxes, balls,or cans. Puppet heads are modeled from papier-maché.
Dramatic Effect	Lighting and sound effects increase dramatic qualities. Costumes and stage settings are an important part of puppet show. The puppet stage can be improvised.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE	
*p. 222	Content: Character traits of the personnae are evaluated in terms of ethical values as applied to the students' own lives. Characters' strengths and deficiencies cause them to overcome or succumb to obstacles.
*p. 223	The motivation for characters' behaviour must be sought in terms of environment, personality, and society.
*p. 224	Common emotions and aspirations unite all people. Cultural differences do exist among people; these should be understood and respected.
Biography *p.261	Biographies and autobiographies are studied for the light they throw on the subjects as well as the effect on the readers' experience.
Short Story Novel Drama *p. 264	Form: The plot may develop in a straight forward chronological manner. The hero and the villian of the piece of literature are identified by their characteristics. The setting (time and place) of the story is important in its relation to the story.

*HANDBOOK FOR ENGLISH LANGUAGE ARTS READING AND LITERATURE GRADES 5 - 12
**HANDBOOK FOR ENGLISH LANGUAGE ARTS SPEECH AND COMPOSITION GRADES 5 - 12
***HANDBOOK FOR ENGLISH LANGUAGE ARTS LANGUAGE STRAND GRADES 5 - 12

ENGLISH LANGUAGE ARTS - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Myths *p. 309	The myths of all countries relate their history, customs, and beliefs.
Poetry *p. 242	Poetry employs the musical quality of words for effectiveness.
*p. 252	Onomatopoeia and alliteration enhance the meaning and musical qualities of poetry. Rhythm may consist of regular or irregular beat. End rhyme is a device for increasing the songlike quality of poetry. Repetition is frequently used to provide tone color.
WRITING	
Words and Expressions **p. 171	Words are selected for clarity, vividness, and precision. Variety in the use of language lends interest.
Sentences **p. 172	There are different kinds of sentences: statements, questions, commands or requests, exclamations. Combining sentences provides variety and interest.
Paragraphs **p. 173	Individual statements on a topic must be related to each other. The paragraph contains an orderly and unified presentation.
Letters **p. 173	The friendly letter form includes the date, salutation, and signature. The envelope includes the address and the return address.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Research and Library Techniques **p. 174	A simple outline consists of a list of items in logical order including the relevant and discarding the irrelevant.
LANGUAGE Grammar ***p. 11	The simple sentence is the primary structure of language and consists of a unit of thought.
***p. 18	The sentence is to be distinguished from word group and fragments and is punctuated by an initial capital letter and a final period, question mark, or exclamation point. The subject and the predicate are the structural elements of a sentence. Nouns are the names of persons, places or things and may be preceeded by determiners such as the, a, his or her. They may be classified as common or proper.
Semantics ***p. 78	Fact is distinguished from opinion because a fact is a statement that can be proven and an opinion is an individual reaction.
Vocabulary ***p. 147	Words may have multiple meanings. The meanings of words may be derived from their context. New words are invented for new discoveries, ideas, and/or situations.

ENGLISH LANGUAGE ARTS - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Spelling ***p. 205	There are regular patterns of sound-symbol relationships. There are common prefixes and suffixes such as in, un, de, ex, tion, ly, ful, ing, or, or er which are used to modify the meaning of words.
History of the Language ***p. 246	Language is constantly changing; variations of the same language occur when people are separated by geographical, ethnic, or social barriers.
SPEECH AND SPEECH ARTS **p. 7	Volume pitch rate, quality of voice are appropriately varied to occasion.
**p. 8	There are standards for pronunciation and articulation which avoid substitutions of d for t, and omission of final and initial sounds.

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HEALTH EDUCATION - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CLEANLINESS AND HEALTH PROTECTION *pp. 168-171 Time: 4 hours	The skin provides a first line of defense against disease and infection. Infectious germs may collect on the skin when proper cleanliness practices are not followed. A daily bath serves to wash away harmful germs that gather on the skin. Frequent, regular brushing and washing of the hair helps to prevent conditions such as dandruff, dry scalp, and pediculosis (head lice). It is important for the hands to be washed after the use of the toilet and before handling or eating foods. Protection against infection is reinforced when people are careful not to share towels, combs, brushes, and other similar personal toiletries.
NUTRITION *pp. 171-173 Time: 7 hours	Digestion takes place within the food tube or alimentary canal. Many parts of the body assist in the digestion of food. Daily practices should be established to promote good digestion, such as eating in pleasant surroundings and in a leisurely fashion, and eating meals at regular times.
DENTAL HEALTH *pp. 174-176 Time: 3 hours	A tooth is constructed of three main parts. The tooth is composed of three types of living tissue.

* HEALTH EDUCATION IN ELEM. SCHOOLS

HEALTH EDUCATION - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DENTAL HEALTH (continued)	There are two sets of teeth. It is important to take proper care of the teeth.
MENTAL HEALTH *pp. 176-181 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: 5 hours	Personality development depends upon heredity, environment, and experiences. A person's attitude toward self, family, friends, and school has an important influence on personality. A positive attitude toward family, friends, school, and community should result in the acceptance and sharing of responsibility. There are specific personality traits which family and friends find acceptable. In order to carry out responsibilities one must learn to budget time for work and play.
EYES AND THEIR CARE *pp. 181-184 Time: 4 hours	Specific body structures and functions serve to protect the eye. The human eye is very similar to a camera. There are three kinds of specialists concerned with the care of the eyes, ophthalmologist, optometrist and optician. It is important to wear and care for eyeglasses for the improvement of one's vision.

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HEALTH EDUCATION - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SAFETY AND FIRST AID *pp. 184-190 Time: 3 hours	Accidents are the leading cause of death in the school-age population.
	Most accidents can be prevented through the development of proper safety habits.
	Many accidents occur at home; these can be prevented by adhering to safety rules, e.g., cleaning up after play.
	Many children are hurt as pedestrians, these can be prevented by following traffic safety rules.
	Many children are hurt riding bicycles; these can be prevented by following bicycle safety rules.
	Wearing the proper clothing for games contributes to safe living.
	Safety rules should be followed at swimming pools and beaches.
	First aid means helping someone who is hurt or suddenly sick. This help is the kind that you give before medical assistance can be administered.
	Wounds are classified as abrasions, lacerations, and punctures.
	Burns should be covered with a clean dressing after washing with cold water.
EXERCISE, REST, AND SLEEP *pp. 190-194 Time: 3 hours	Exercise can be obtained in various ways, depending on one's interests.
	Rest can be obtained in various ways.
	One should plan for his or her own exercise and rest.
	Sleep is important for good health.
	Good health and safety habits make exercise more enjoyable and more valuable for the individual.

HEALTH EDUCATION - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ALCOHOL, TOBACCO, AND DRUGS *pp. 194-198 Time: 5 hours	Alcoholic beverages are derived from the fermentation of sugar and yeast. Alcohol is often used on religious and social occasions. Excessive drinking may result in nutritional deficiencies. Tobacco disturbs the normal function of many of the body's systems. There are many factors which motivate children to smoke. There are many good reasons why one should not smoke. Marijuana is a drug that has an abuse potential that can be harmful.
HUMAN GROWTH AND DEVELOPMENT *pp. 199-200 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: 3 hours	Individuals vary in the rate of growth. The onset of puberty varies with individuals. Girls usually reach puberty sooner than boys. The endocrine glands play an important role in pubertal changes. Menstruation is a normal and natural physiological function. Proper hygienic habits during menstruation are important.

LIBRARY-MEDIA GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ORGANIZATION	Specific titles are located by using Dewey Decimal classification information on catalog cards and book spines.
USE	The organization and use of yearbooks, maps, atlases, gazetteers, almanacs and thesauruses is understood. Newspapers are used to find specific information. Information about outstanding people is obtained from collected and individual biographies.
SELECTION	Resources, printed and audiovisual, will be selected independently to gather information on specific topics.
INTERPRETATION	Notes taken from more than one source will be correlated for a report. Oral and written reporting is practiced. Multi-media bibliographies are compiled. Folklore and myths of major world cultures are presented. A two or three step outline organizes the information summarizing the notes taken on a given topic.
PRODUCTION	Transparencies, filmstrips and cassette tapes are prepared from information located in the library.

MATHEMATICS - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER; NUMERATION *pp: 23-26, 31,34, 38,39,44 Time: 23 days	Intersection of sets; symbols Venn diagrams Place value through millions; read and write numerals through millions Round numbers to the nearest hundred-thousand Decimal system of numeration through thousandths Round numbers in decimal form to nearest whole number Relationship between decimal system of notation and dollars-cents system Roman numerals D, M
ADDITION AND SUBTRACTION OF WHOLE NUMBERS *pp: 24,25,30,31,34,37, 38,39,42,45 Time: 16 days	Standard algorithm for computing sums, two or more addends, numbers in the hundred-thousands and beyond Observe and use properties of addition Standard algorithm for computing differences Addition and subtraction in dollars-cents system
MULTIPLICATION OF WHOLE NUMBERS *pp: 26,31,36,39,40,43 Time: 17 days	Algorithm: any whole number by numbers 10-99 Use commutative property of multiplication; the distributive property of multiplication over addition Multiplication in dollars-cents system

MATHEMATICS: GRADE 4, GRADE 5, Scope and Sequence, Curriculum Bulletin, 1969-70 Series No. 8

MATHEMATICS - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DIVISION OF WHOLE NUMBERS *pp: 26-29, 32,36,39,40,43 Time: 24 days	Algorithm: short form with divisors less than 10 Algorithm: verticla format, dividend numbers in the thousands and beyond, divisors 10-99 Division in dollars-cents system
FRACTIONAL NUMBERS *pp: 25,26,28,29,32,41,42 Time: 30 days	Concepts: division of fractional numbers; sixteenths and other fractional numbers; density; a fraction as an indicated division Equivalence using multiplicative identity, "1" Procedure for expressing a whole number as a fraction; mixed numeral as improper fraction; an improper fraction as a mixed numeral or as a whole number Algorithm: multiplication of any two fractional numbers Algorithm: finding least common denominator Algorithms: computing sums and differences of fractional numbers Algorithms: computing sums and differences of numbers in decimal form through thousandths
GEOMETRY *pp: 23,32,37,43,46 Time: 6 days	Relationships; between planes and lines; between planes, between parallel lines Plane figures: ellipse, pentagon, parallelogram Angle: concept, naming, symbols, classification Circle: central angle, arc Area: concept

MATHEMATICS - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MEASUREMENT *pp: 25,27,29,33,40,41,44,45 Time: 10 days	Linear: tenth of an inch; read measurements to nearest inch, half inch, quarter-inch, eighth-inch; rulers calibrated in sixteenths of an inch, centimeter, millimeter; kilometer Perimeter: formula for perimeter of equilateral polygons of 3,4,5 sides Area: rectangular region Time: decade, century Capacity: liquid and dry measure, liter, kiloliter Scale drawings, metric dimensions Mass-weight: milligram
ALGEBRAIC CONCEPTS *pp: 24,30,38,45 Time: 3 days	Concept of ordered number pair Associate an ordered number pair with a point in a plane Graph: solutions of an equation with two variables (first quadrant)
STATISTICS AND PROBABILITY *pp: 30,44,45 Time: 7 days	Interpret circle graphs when sectors represent fractions with related denominators Read, interpret,and construct bar graphs; line graphs Compute mean Median (odd number of cases) Coin tossing: two coins; possible combinations; probability of a favorable outcome expressed as a fraction; tabulate results of several tosses

MUSIC - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LISTENING	
Style Melody	Phrases in a melody vary even when repeated. The expressive quality in music can be compared to other arts, e.g., paintings. Composers often favored a particular style of composition , e.g., harmonic, contrapuntal.
SINGING *p. 26-35	Melodies are often arranged in two, three or four part harmony.
Part-Singing	Understanding and hearing intervals is important to part singing. Part singing is introduced through rounds, partner songs and descant. Listening is integrated with singing to produce part-singing.
RHYTHM *p. 6-19	Rhythm is the force which generates musical flow. 6/8, 9/8 and 12/8 are compound meter signatures. 5/4 and 7/8 are seldom used in American traditional songs.
MUSIC READING *p. 86	
Melodic Patterns	Melodies often move in repeated musical phrases. Written symbols (musical notation) provide a system of storing and retrieving musical ideas.
Solfeggio	Solfeggio is a system in which the tones are named, e.g., do, re, mi, fa, sol, la, ti, do.
INSTRUMENTAL *p. 71	The classroom instrumental music experience includes: pitched and non-pitched rhythm instruments, and the recorder.

*TEACHING MUSIC GRADES 5 - 6

PHYSICAL EDUCATION - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
INDIVIDUAL, DUAL AND LEISURE TIME SPORTS	
TENNIS	Ready Position Eastern Grip Serve Forehand Drive Backhand Drive Squad Activities: Against a wall; over a line; over a net; Ball Pitching Machine; Rebound Net; Stroke Developer Lead-up Games: Learn-a-Serve Fore and Back In the Air
TRACK AND FIELD *pp. 399-404	Starts: Indoor Sprint Start (Bunch Start) Outdoor Sprint Start Standing Start Crouching Start Passing the Baton (Visual) Standing Broad Jump Lead-up Activities: Running 10 yards at full speed, then gradually slowing down Jogging circular track "Pass It to Me" "Measure My Jump"
GYMNASTICS Apparatus** *pp. 272-279	Balance Beam - walk forward, backward, with turn, with leg swing Parallel Bars - walk across (using hands on bars); jump support; dips Ropes - Climbing; descending; swinging Swedish Box - Vaulting: Standing Squat Vault Squat Vault with Run Trampoline - Basic Bounce; Seat Drop; Knee Drop; Hands and Knees Drop

**Spotting and Other Safety Instructions Must be Emphasized

*PHYSICAL EDUCATION PRE-K - 6

PHYSICAL EDUCATION - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
Stunts *pp. 278-279	Ankle Grasp Walk Frog Jump Indian Leap Pull-Up Push-Up Siamese Twin Walk Toe Touch	
Tumbling	Backward Roll from a Jackknife Position Shoulder Roll	
TEAM SPORTS *pp. 280-324	Basketball - Catching: Below the Waist Above the Waist	
BASKETBALL	Basketball - Passing: Chest Pass Push Bounce Pass Shooting: Chest Shot Chest Foul Shot Underhand Foul Shot	
	Lead-Up Games: Line zig zag Zig-Zag Push Bounce Ball Side Pass Ball Basketball Shuttle Line Touch Ball	
FLOOR HOCKEY	Sweep Pass and Shot Receiving the Puck Sweep the Floor	Line Passing Sweep Passing to the Target Lead-up Games: Keep Away Line Hockey
FOOTBALL	Passing overhand Punting Catching	Passing at Target Punting for Distance Lead-up Games: Passback Kickback

PHYSICAL EDUCATION - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE	
SOCCER	Trapping Dribbling Kicking	Passing Lead-up Games: Circle Kick Ball Line Socker
SOFTBALL	Throwing Catching - below and above the waist Underhand Pitching Batting Lead-up Games Hit and Run Running Bases Throwing - for distance; for accuracy	Fielding a Ground Ball Pitching at Target
VOLLEYBALL *pp. 393-398	Underhand Serve (Open Hand) Passing-Underhand Below the Chest; Overhand Above the Chest Squad Activities: Against a Wall Over a Rope Over a Net Lead-up Games: Circle Keep It Up Keep It Up at Net	
PHYSICAL FITNESS ACTIVITIES *pp. 444-452	AAHPER YOUTH FITNESS TEST ITEMS - Pull-Up (Boys); Flexed Arm Hang (Girls) Sit-up (flexed leg) Shuttle Run Standing Broad Jump 50 Yard Dash 600 Yard Run-Walk	
DANCES pp. 327-349	Folk dances - contribute to understanding a country's culture. Branle a Six (French Dance) Cherkessia (Syria & Israel) Cowboy Schottische**(Round Dance)	

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Cross Over Polka***(Polish) Danza***(Puerto Rican) Darling Nellie Gray (grand right & left) Feiar***(Norwegian Schottische) Girl I Left Behind Me (Ladies Chain) Heeia (Hawaiian) Koko Sawa***(Ghana) Mexican Waltz (step, swing & balance) Minuet (Minuet & curtsey) Puttjenter***(Mill) Red River Valley***(U.S. circle, star) Rustic Reel (Line reel) Sicilian Tarantella (Italian) Troika (Russian)

***Basic Dances for Grade 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HOW MAN CHANGES MATERIALS *pp: 26-49 Time: 6 weeks	
Separating Substances	Fresh water may be obtained from salt water by the processes of evaporation and condensation of the water leaving the salt behind. Filters and strainers separate particles of different sizes. Solids which do not dissolve may be separated from liquids by using a filter or strainer. Some liquids which do not mix can be separated by standing.
Chemical Changes	Living things such as bacteria, yeast, and mold make changes in food. These changes are souring, changing sugar into alcohol and carbon dioxide, and changing alcohol to vinegar. Carbon dioxide gas is made when baking powder is mixed with water. Household bleach releases oxygen which combines with a dye and changes it. Rust forms when iron combines with oxygen. Fuel, sufficient air, and heat are needed for burning. Fires can be put out by removing the fuel, cutting off the air supply, or lowering the temperature. When a candle burns, water and carbon dioxide are produced. When a different substance is made, a chemical change occurs.

*SCIENCE - GRADE 5, #6, 68-69 Series

SCIENCE - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITTLE ENVIRONMENTS *pp: 50-76 Time: 5 weeks In the Schoolyard, On and Under A Tree, On the Lawn, In the Soil, In the Water	Many kinds of plants and animals live in New York City. The living things vary in size. Each kind of environment has its own conditions of heat, moisture, wind, light, minerals, air, plants, and animals. Plants and animals depend upon each other and their environment for food, warmth, shelter, air, and water. Green plants are producers, animals are consumers. Certain microscopic bacteria and fungi are decomposers. Living things change the environment.
THE SUN'S FAMILY *pp: 77-105 Time: 5 weeks Planet Earth in the Solar System	The earth is one of nine planets which orbit around the sun. Planets are illuminated by light from the sun and move in elliptical orbits around the sun. The distance of a planet from the sun varies during its revolution. Planets are at different distances from the sun; those closest to the sun move the fastest. Asteroids and comets are part of the solar system.

SCIENCE - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Our Star, The Sun	The sun is a nearby star; stars are distant suns. The sun shines because of its own atomic activities. Life depends on the sun. The sun rotates on its axis and could accommodate over a million earths inside it. It takes light 8 minutes to travel from the sun to earth. The entire solar system moves in space.
CLIMATE *pp: 106-137 Time: 7 weeks	
Climate and Weather	Climate is the average weather for a region over a long period of time. There are many climates in the United States. The most important characteristics of a climate are temperature and moisture.
Climate and Latitude	Latitude is the distance of a place from the equator and determines year-round temperature. The more slant to the sun's rays, the less heating results. Winds are caused by the unequal heating of the earth.
Climate and Oceans	Water warms up and cools off more slowly than land. Coastal cities are warmer in winter and cooler in summer than inland cities at the same latitude. The West Coast climate is different from that of the East Coast because of prevailing westerlies. There is a water cycle.

SCIENCE - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Climate and Mountains	Mountains affect temperature and rainfall. The higher the elevation, the cooler the region. The side of a mountain facing the wind has more rainfall than the other side. When moist air is pushed up a mountain it cools, the water vapor condenses into clouds, and rain may fall.
MIRRORS AND THE REFLECTION OF LIGHT *pp: 138-157 Time: 5 weeks	
Seeing With Mirrors	The image of an object is reversed in a mirror, left to right. Tilting a mirror at different angles helps to see other objects. A mirror works because it reflects light.
Mirrors Reflect Light	A mirror changes the direction of light striking it. The path of light reflected from a mirror can be changed by facing the mirror in different directions. Light can be reflected many times. The angle of incidence equals the angle of reflection.
MAKING IT GO *pp: 158-188 Time: 6 weeks	
Muscles Make It Go	Muscles move many tools and machines. Muscles move arm and leg bones to which they are attached. Muscles work in pairs opposing each other.
Flowing Water Can Make It Go	Flowing water can move heavy loads downstream and can turn wheels. Running and falling water can exert a force.

SCIENCE - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	A dam is built across a body of water to raise the level of the water behind it. The sun is the source of energy for flowing water.
Wind Makes It Go	The heating of the earth causes winds. Winds move sailboats and turn windmills.
Steam Makes It Go	Steam from water boiled in a confined space can push very hard. Steam turns the blades of wheels and drive the propellers of ships. Steam gets its driving force from burning fuel or nuclear energy.
Rapid Burning Makes It Go	Hot gases are produced when fuels burn. In some engines the hot gases push against the pistons which drive wheels or propellers which make the vehicle go. In jets and in rocket engines, hot gases are blown out of the rear end causing the vehicle to go forward. Jets use oxygen from the air; rockets carry their own supply.
BATTERIES AND BULBS *pp: 189-218 Time: 6 weeks	
Bulbs in Different Kinds of Circuits	Electricity flows in a circuit. A series circuit provides only one path for the current. A parallel circuit provides 2 or more paths for the current. In a parallel circuit the other bulbs will remain lit if one bulb goes out. In a series circuit all the bulbs go out if one goes out.
Dry Cells In Different Kinds of Circuits	The voltage of a series arrangement of dry cells is equal to the sum of the voltages of the individual cells. The voltage of a parallel arrangement of similar cells is equal to the voltage of any individual cell.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Fuses	A fuse is a special metal strip that is part of a circuit which melts when too much electricity flows through it.

*SCIENCE - GRADE 5, #6, 68-69 Series

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SOCIAL STUDIES - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
OUR WORLD: GEOGRAPHIC AND ECONOMIC STUDIES	Global geographic knowledge includes air mass and weather, winds and direction, altitude and contour mapping, ocean currents, global distribution of population, and natural resources.
HOW DO THE PEOPLE OF THE UNITED STATES USE THEIR GEOGRAPHY *pp. 3-7 Time: 9 weeks **Case Study of the Northeast Case Studies of Other Regions Case Study of Puerto Rico	
WHAT THE PEOPLE OF CANADA ARE DOING WITH THEIR GEOGRAPHY *pp. 8-13 Time: 5 weeks	See the sample case study for sub-topics.
HOW LATIN AMERICANS USE MODERN TECHNOLOGY *pp. 14-20 Time: 8 weeks	See the sample case study for sub-topics
HOW THE PEOPLE OF EUROPE ARE DEVELOPING NEW RELATIONSHIPS IN THE LIGHT OF MODERN GEOGRAPHY *pp. 21-27 Time: 8 weeks Comparative Study of Great Britain and West Germany	See the sample case study for sub-topics.

*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 5
**Described as a sample Case Study on next page.

SOCIAL STUDIES - GRADE 5

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Case Study of Poland - a Link Between Eastern and Western Europe Comparison Study of Sweden and Italy - Two Peninsula Nations	
Note: Select one of the following two topics.	
HOW THE PEOPLE OF ASIA ARE USING THEIR GEOGRAPHY *pp. 28-30 Time: 10 weeks Comparative Study of China and India	See the sample case study for sub-topics.
HOW THE PEOPLE OF AFRICA ARE USING THEIR GEOGRAPHY *pp Time: 10 weeks	See the sample case study for sub-topics.
Case Study of the Northeast (A sample Case Study Approach)	The region is characterized by high concentration of people and industry, centers of manufacturing, commerce, trade, education, and technology.
Geographic Features	Main features include moderate and varied climate, nearness to ocean, mountain ranges, coastal plain, coastal waterways, and navigable rivers.
Chief Occupations of the People	Major occupations include skilled and semi-skilled jobs in manufacturing, building, sales and service, and government.
Geographic Basis for Industry	Important factors include topographic features, climate, man-made adaptations such as roads, canals, railroads.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Geographic Basis for Agriculture	Important factors include fertile soil in gentle hills and valleys, adequate rainfall and growing season.
Interdependence Within the Region and With Other Regions	There are resources within the region such as coal, iron, water power and skilled labor; other regions supply resources such as copper, aluminuim, oil, and food.
Major Problems in the Region	The region faces loss of industries and population to the "sunbelt" states.
Social and Economic Practices of the Region	The region is noted for ethnic diversity, high levels of education and inventiveness, and high standard of living.
SKILLS	Notes are taken of teacher's comments. False ideas are pointed out in discussions. Evidence of propaganda in speeches and articles are detected. Bibliographies are made. Degree of latitude is converted into miles. Degree of longitude is converted into time. Polar projection maps are made. A numerical chronology is developed.

CHILD DEVELOPMENT FOCUS

CHILDREN NEEDS

Basic needs, the same for all children, are the drives that influence behavior. These needs include:

1. NEED TO BE VALUED
   A child's self-image has top priority. A child can't be "somebody" unless the child is "somebody" to someone else. Self-image must be reflected in the eyes and actions of those the child loves and values. All children must be valued for who they are, where they come from, and what they bring with them from their culture, language, desires, and expectations.

2. NEED TO DO
   Children learn by using all their senses to explore, discover, and form judgments about the things in their world.

3. NEED TO SHARE WITH PEOPLE THEY TRUST AND BE TRUSTED TO SHARE
   Children need adults who care, who can guide the children's discovery into mutually respected action, who inspire and develop competence and confidence.

4. NEED TO BE GIVEN A CHANCE TO GROW AT HIS OR HER RATE IN HIS OR HER OWN WAY
   Growth for children has many dimensions - social, emotional, physical, and intellectual. Growth is uneven and highly individual. All children do not reach the same level of growth at the same age, nor does a child grow in the same way in all areas.

PRINCIPLES OF GROWTH & DEVELOPMENT

Basic principles that enable persons to guide children with a degree of assurance include:

1. DIFFERENTIATION
   Development proceeds from simple to complex. In both structure and activity, development is gradual in the direction of complexity and variety. Differentiated structures and functions become organized in new and more inclusive patterns.

2. DISCONTINUITY OF GROWTH RATE
   Development is never uniform or all at the same time. Various parts and systems grow at various rates at a different time. Growth shows characteristic spurts or peaks and then slows down to periods of relative latency.

3. INTERRELATEDNESS OF GROWTH
   Every aspect of the child's life affects every other aspect. The physical and social environment as well as factors of personality and physical development affect academic achievement.

4. DIVERSITY OF GROWTH
   No two children are exactly alike. No two grow quite alike. Wide differences exist among children of the same age, the same family, and from the same community. Each child has his or her unique growth style.

THE TEACHING ADULT SHOULD BE FAMILIAR WITH THE LEVELS OF GROWTH IN EACH AREA, WHICH MAY OR MAY NOT CORRESPOND WITH THE CHRONOLOGICAL AGE OF EACH CHILD.

CHILD DEVELOPMENT FOCUS

GRADES 6 - 7 - 8 - 9

OVERVIEW: Generally includes ages eleven to fifteen. Early adolescence is a period of rapid growth that transforms the child into an adult. It is the period in which the young person attains adult status, appearance and sexual maturity, in the physical sense. The adolescent develops formal or abstract thinking abilities.

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Eleven - twelve Year Old	Eleven - twelve Year Old	Eleven - twelve Year Old
• Wide variations in physical maturity occur. Girls are about two years ahead of boys in beginning the adoleecent cycle of growth and tend to reach physiological maturity earlier; girls tend to be larger and stronger than boys of the same age. • Marked physical changes may affect their energy; the child may easily tire. • May show awkwardness in movement due to rapid muscular and skeletal growth. • Team spirit is strong; child may enjoy vigorous games.	• Is restless and eager for activity, exhuberant, outgoing and boisterous. • Skills and boldness are admired. • Quarrels and makes up readily, responds to anger frequently and violently, physically and verbally. • Similarity of interests and mental age increasingly influences choice of friends; has developed a strong loyalty to peers. • As puberty approaches, child may desire periods of aloneness and may show beginnings of shyness. • May have fears although may not admit it. • Has a growing sense of humor.	• Is capable of being absorbed in manipulative, constructive, and experimental activities. • Ability to reason is on the increase, with an understanding of abstract ideas. Continued heightening of emotional susceptibility. • Can understand human reproduction more fully.

CHILD DEVELOPMENT FOCUS
GRADES 6 - 7 - 8 - 9

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
	Eleven - twelve Year Old (Cont.) • Has admiration for the more skillful. • Is critical of adults, yet tends to act politely, factually, seriously, honestly, and confidingly with adults.	
Thirteen-Year-Old • Is less awkward and angular. • Boys approach girls in height. • Girls are still more physically mature than boys. • Has very high energy level. • Muscular growth is rapid; restlessness may be a concomitant.	Thirteen-Year-Old • Is sometimes moody, withdrawn, and reflective. • Has fewer friends. • Sex consciousness may cause self-consciousness and shyness with opposite sex; however, the desire to tease appears as part of the sex attraction. Inner attitudes and tensions may be brought on by changes in body buildup and chemistry. • Often forms strong attachments to adults who show personal interest. Tendency to idol worship.	Thirteen-Year-Old • Increases in critical thinking capacity. • Is inclined to solve own problems; increasingly logical approaches to problems. • Gains in memorizing ability.

CHILD DEVELOPMENT FOCUS
GRADES 6 - 7 - 8 - 9

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Thirteen-Year-Old (Cont.) • Puberty cycle is still in progress; development of secondary sex characteristics continues. • Increases in height and weight may cause poor posture. • The heart may not develop rapidly enough to keep pace with unusual growth of body and limbs; fainting and dizziness may occur.	Thirteen-Year-Old (Cont.) • Conduct is influenced by the opinions of the group to which the boy or girl belongs. Attempts by adults to criticize their child's friend's qualities often intensify loyalties to the friend. Child may tend to reject parents or may feel rejected because of conflicts over behavior and authority relations.	
Fourteen-Year-Old • Girls are about two years ahead of boys at this age; sexual differences become more noticeable. • Posture is improving; general health is reflected in appearance. • Increased muscular development and resistance to fatigue make new skills and activities possible. More demanding sports may be played.	Fourteen-Year-Old • Is resentful of parental control; enjoys doing things independently. • Group approval is of primary importance. • Expresses feelings freely; generally happy and friendly but does have short, explosive bursts of temper. • Sexual manifestations may cause self-consciousness and, in turn, sexual delinquency may be caused by a feeling of non-belonging in the home.	Fourteen-Year-Old • Approaches crest of intellectual development, but judgment is far from mature. • Uneven development occurs in various areas; the adolescent may be adult in grasping mental problems, yet remains a child in body and emotions.

CHILD DEVELOPMENT FOCUS
GRADES 6 - 7 - 8 - 9

PHYSICAL	SOCIO-EMOTIONAL	INTELLECTUAL
Fourteen-Year-Old (Cont.) • Increased control over accessory muscles makes possible many new skills and refinements in previous skills.		**Fourteen-Year-Old** (Cont.) • Concepts of natural laws and physical relationships are almost fully developed. • Ability to use formal logic is generally superior to experimental capacity. • Usually strives for outstanding performance.
Fifteen-Year-Old • May have achieved physiological adulthood. • Continued improvement in muscular coordination. • Puberty cycle is completed in majority of cases. • May have periods of glandular instability with fluctuations in energy level; ailments may include headache, nose bleed, palpitation, nervousness and acne.	**Fifteen-Year-Old** • Is intensely emotional while trying to understand social relationships. • Is more cheerful, friendly, outgoing; shows better control of temper and feelings. • Parent-adolescent conflict is at its peak. Adolescent has tendency to respond more to the influence of a teacher than of the parent. Conformity to group may be stronger than conformity to parental controls. • Likes to be independent; shows a "know it all" attitude. • Interest in and emphasis on physical attractiveness and good grooming may be at its height.	**Fifteen-Year-Old** • Generally thinks clearly and logically. • Deals well with abstract problems. • Can make use of capabilities e.g. becoming discussion leaders, assuming increasing responsibility for school activities. • Is more apt to think independently. • Is intellectually serious.

SCOPE AND SEQUENCE

GRADE 6

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ART - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING	
**pp: 9-10	
Time: 9-12 Weeks	
Color Qualities	Colors may be mixed directly on the painting surface. Colors are light and bright,rich and dark,or deep and subtle. Colors can run,twirl,melt,and flow. By variations of light,dark,and color a three-dimensional quality is expressed. Color choice can express mood.
DESIGNING IN TWO DIMENSIONS	
*pp: 25-26	
Time: 6-9 Weeks	
Design and Craftsmanship	The crafts of other cultures afford examples of good design and craftsmanship. The function of an object often dictates its design. Basic concepts of design apply to simple techniques of weaving,knotting, and stitchery.
Weaving and Knotting	Knitted garments can be unraveled. A blunt needle and yarn are used to reweave the open spaces in burlap. The knotting of threads creates varied textures. Two sticks can serve as supporting frame for weaving yarn.
The Loom	Simple cardboard can serve as a frame for a loom.

** ART FOR THE MIDDLE SCHOOL, Grades 5,6,7,8

ART - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DESIGNING IN THREE DIMENSIONS **pp: 33-34 Time: 6-9 Weeks Constructing with Paper	Pleating, crushing, folding, curling, rolling, and scoring change a piece of paper from a two-dimensional shape to a three-dimensional form. Forms in three dimensions are created by joining and fastening materials together. Three-dimensional forms penetrate and enclose space. Paper forms are joined by slitting, weaving, and overlapping as well as by using glue or fasteners. Patterns of dark and light are created by slitting or piercing surface of form.
DRAWING *pp: 3-4 Time: 9-12 Weeks The Qualities of Line	Every part of a drawing is part of a design. Drawn lines have direction. Lines vary in size and direction. Lines may express value, texture, and pattern. The scale in drawings can be varied by using large sheets of paper, vertical or horizontal strips, or unusual proportions. Details add interest to a drawing.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PRINTMAKING **pp: 45-46 Time: 4-6 Weeks Rubbing for Repetition	Printmaking is a process which duplicates images. The application of pressure with the side of a crayon to paper placed over a textured surface produces an image. By adjusting the object beneath the paper and repeating the process, a single object may be represented many times in a design. Cutouts from original designs or from magazines can provide shapes for rubbings. The application of a thin coat of paint to the cutout transfers the image to the rubbing paper.
LETTERING **pp: 57-58 Time: 2-4 Weeks Principles of Design	Simple tools are used in lettering. Letters and symbols are combined in designs. Individual letters are always legible. Cutout letters are used as stencils. Newspapers and magazines contain examples of different typefaces. Contrasting colors make signs attractive and visible.
Stroke and Spacing	Columns in newspapers, turned horizontally, provide guidelines for lettering. An alphabet is designed with a few basic strokes. Strokes are uniform. Letters are spaced visually with the goal of simplicity and legibility.

ART - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
THE PUPPET PERFORMANCE **pp: 65-66 Time: 4-6 Weeks Simple Puppets and the Puppeteer	Dialogue evolves from the character of an expressive puppet. Original plays are written or stories adapted for the puppet stage. The puppet's character, as well as the puppet's figure, is created by the puppeteer. Simple lighting effects are part of the puppet performance. Puppets created at different times and places show great variety. Puppeteers are hidden from the audience by the puppet stage. Finger puppets are miniature puppets whose costumes slip on and off fingers. Fist puppets require lipstick or other washable medium to add detail to the face.
PHOTOGRAPHY **pp: 75 Time: 4-6 Weeks The Photograph and Visual Perception	Picture taking is a process in which ideas and images are examined,selected, and rejected. The viewfinder of camera expands the student's visual awareness. Photography applies the principles of composition such as balance,emphasis, rhythm,tension,and movement. Photographs stimulate visual perception. Photographs are cropped to reveal the most interesting sections. Photographs can be cut up and arranged to create feelings of imbalance or motion,humorous or bizarre effects. Photographs can be enlarged.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FILMMAKING *pp: 85-86 Time: 4-6 Weeks	
The Art of Film	Filmmaking expresses a personal viewpoint in a contemporary medium. Film is an art form. Filmmaking imposes technical limitations. Filmmaking integrates the visual arts and other subject areas.
The Moving Image	Flipping pages of drawings whose figures have slightly changed positions can animate drawings. Moving images on film create an illusion of motion on the viewing screen. Magic markers can create lines,spots,and shapes on film that proceed from frame to frame while moving from one position to another when projected. The design on film is considered as a linear painting using variety,repetition,rhythm and space.
COSTUME DESIGN *pp: 95-96 Time: 3-5 Weeks	
Costuming and the Individual	Choice of clothing expresses individuality. Selecting and designing clothing presents opportunities to apply art concepts to a real situation. Costume designing projects the self image.
The Effect of Color	Fabrics exist in a wide variety of colors. Color in clothing has an effect on the appearance,mood,and personality of the individual. Some colors seem to exaggerate size while others seem to minimize size. Different people look better in different colors.

ENGLISH LANGUAGE ARTS - GRADE 6

CONTENT AREA AND TOPIC		SKILLS AND KNOWLEDGE
LITERATURE		
Short Story Novel and Drama	*p. 222	Content: Characters in books may reflect the effects of their good or bad environment. Characters in books help us develop a set of personal values and to make independent judgments, and to take action accordingly.
Poetry	*p. 242	Poetry is made more vivid and imaginative through the frequent use of similes and metaphors.
	*p. 254	The emotional impact of poetry may be heightened by the type of rhythm employed. The rhyme scheme may follow a regular or irregular pattern. The lines of the poem may follow a regular stanza form such as the couplet or quatrain. The choice of words and the sounds of the lines convey mood.
Essay	*p. 244	The personal essay may express the author's sense of humor, way of thinking, likes and dislikes.
WRITING		
Words and Expression		
	**p. 174	Many words have interesting historical background and derivation.
	**p. 174	Many words may be grouped into families by their common roots to which prefixes and suffixes may be added, e.g. di, dis, e, ex, trans, se, circum, de, ob, oc, op, un, al, fy, ence, ance, ary, ery, ity, able, ible, less, ment, ty, ly, fer, meter, ped, fort, clud, clus, cred, sta, ten, tain, struct.

*HANDBOOK FOR ENGLISH LANGUAGE ARTS READING AND LITERATURE 5 - 12

**HANDBOOK FOR ENGLISH LANGUAGE ARTS SPEECH AND COMPOSITION GRADES 5 - 12

***HANDBOOK FOR ENGLISH LANGUAGE ARTS LANGUAGE STRAND GRADES 5 - 12

ENGLISH LANGUAGE ARTS - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Sentence **p. 175	The complex sentence contains a main clause and one or more clauses with subordinate ideas. The position of words in the sentence clarifies meaning.
Paragraph **p. 176	A narrative paragraph contains a sense of unity by telling of a single significant piece of action. The descriptive paragraph achieves sensory effects through effective and selective words. The simple expository paragraph of the "how to do" or "how to make" variety uses sequential order.
Letters **p. 177	The proper business letter form may be in block or indented form containing the sender's address, the inside address, the proper salutation, and closing.
Research and Library Techniques **p. 177	Brief notes are organized in a meaningful sequence developed from a broad outline.
LANGUAGE	
Grammar ***p. 19	Position and form signals are used to identify the following parts of speech: noun, verb, adjective, adverb, pronoun, determiner.
Semantics ***p. 82	Words and names may convey positive and pejorative meanings.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Vocabulary ***p. 148	Dictionaries are an excellent source of multiple meanings of words.
Spelling ***p. 206	The Basic List of Spelling Words contains words appropriate for each grade. Common abbreviations exist for days, months, titles. Many English words have silent letters reflecting their foreign derivation e.g. knee, thought, knight, neighbor.
SPEECH AND SPEECH ARTS **p. 19	The intonation, rising and falling of pitch, has a pattern.
**p. 28	Performing a role in a play demands skills of pantomime, body action, and appropriate voice change.

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HEALTH EDUCATION - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CLEANLINESS AND HEALTH PROTECTION *pp. 201-206 Time: 4 hours	People who live in communities are always faced with the threat of communicable diseases. The community undertakes measures to prevent disease through a program of education, inspection, and disease control. Building codes are established to safeguard health by establishing regulations for toilet facilities, plumbing and sewage. Sanitation workers keep the streets clean and dispose of garbage. Health officers inspect restaurants to protect the public from unsanitary conditions. The Environmental Protection Agency maintains a continuous program of education and analysis in order to control air and water pollution. Good health is everyone's responsibility; resistance to communicable disease can be developed in many ways. The basic four food groups **guide us in planning a** balanced diet. Care should be taken in the preparation and preservation of foods.
DENTAL HEALTH *pp. 211-214 Time: Flexible	Caries of the teeth are caused by bacteria. Acid is a by-product of interaction between bacteria and carbohydrates. Acid dissolves calcium from the teeth. Tooth decay and gum damage can be minimized or prevented by proper dental care. Dental plaque is a soft substance consisting of masses of bacteria, and the remains of food particles left on tooth surfaces.

* HEALTH EDUCATION IN ELEM. SCHOOLS

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DENTAL HEALTH (continued)	Plaque may be a source of tooth decay but can be controlled by proper brushing. Dental floss should be used regularly to clean food from between the teeth. Visiting a dentist regularly is a valuable health practice.
MENTAL HEALTH *pp. 215-219 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: 5 hours	Children and parents strive continuously to develop a harmonious family unit. As a child develops, he or she finds a need to make and retain friendships. Making and keeping friends involves certain responsibilities. It is important to learn how to handle both success and failure.
EYES AND THEIR CARE *pp. 220-222 Time: 4 hours	Eyesight is important because the world we know is largely the world we see. The eyeball is made up of three layers. Eye defects interfere with vision. Proper lighting for study helps avoid eyestrain.
SAFETY AND FIRST AID *pp. 222-230 Time: 3 hours	Injuries while playing games can be reduced by practicing safety rules. Automobile passengers sometimes contribute to accidents by distracting the driver.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SAFETY AND FIRST AID (continued)	First aid is defined as the immediate and temporary help given to a victim before the doctor arrives. Traumatic shock is a dangerous condition which appears frequently in victims of accidents. It is important to be able to recognize and treat this condition. One should be able to recognize a possible fracture, and administer proper first aid care. Stopping of breathing may occur in a number of different ways. Artificial respiration is needed when a victim has stopped breathing. A victim having a severe epileptic seizure may be helped by proper first aid. Many children are injured or die from poisoning each year. Preventive steps and proper first aid can reduce the severity of these accidents. Many people, particularly middle-aged and older persons, are subject to heart attacks. The first aider can be helpful if the proper action is taken.
EXERCISE, REST, AND SLEEP *pp. 232-236 Time: 3 hours	A healthy, physically fit person gets the most out of life. A person can achieve and maintain a high level of health and fitness if he or she participates in a program of daily vigorous exercise. By learning lifetime sport skills such as golf, tennis, and bowling early in life, a child is preparing for the continuation of fitness activity during the adult years. Maximum fitness is achieved and maintained when regular, vigorous activity is balanced by an adequate amount of rest.

HEALTH EDUCATION - GRADE 6

CONTENT AREA AND TOPIC

ALCOHOL, TOBACCO, DRUGS, AND SUBSTANCE ABUSE
*pp. 236-241
Time: Flexible

SKILLS AND KNOWLEDGE

Excessive drinking interferes with one's judgment and coordination.

All people do not react to alcohol in the same way.

Alcoholics and their families can obtain help from a number of organizations, such as Alcoholics Anonymous and Al-Anon.

Young people begin to drink socially for many reasons.

Nicotine has various harmful effects on health.

Smoking is a difficult habit to break.

Under some conditions, marijuana use can become so unpleasant that panic results.

For some people, marijuana can be harmful.

Barbiturates are depressants which users take because of intoxicating and sedating effects.

Abuses of barbiturates often cause serious social and emotional problems.

Barbiturate overdose occurs frequently.

Barbiturate withdrawal may lead to convulsions and death.

The inhalation of the fumes from chemicals such as airplane glue produces sensations resembling alcoholic intoxication.

Inhaling volatile substances can be harmful to the brain, liver and kidneys.

There are many reasons that young people have for drug use.

By developing regard for our physical, emotional, mental and, social functioning and well-being, we are less likely to harm ourselves with drug misuse and abuse.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HUMAN GROWTH AND DEVELOPMENT *pp. 241-242 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: 3 hours	Bodily changes that occur during puberty prepare girls and boys for womanhood and manhood. In boys, puberty involves the growth of hair on the face and in the pubic regions, change of voice, and the maturing of the reproductive system. In girls, puberty involves growth of hair under the arms and in the pubic region, development of the breasts, and maturing of the reproductive system. An important change in girls is the beginning of the menstruation process. Menstruation occurs as a natural process of growing up, and, therefore, a normal healthy girl may continue with most usual physical activities.

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LIBRARY-MEDIA GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
USE	*Abridged Readers Guide* is used to locate specific magazine articles. Citations are found and used in relevant indices of special materials, e.g., Brewton, *Index to Children's Poetry*. Reference works are used in relation to specific subject areas.
INTERPRETATION	Paraphrasing information taken from reference sources is practiced. Significant ideas and information are differentiated from the less significant.

MATHEMATICS - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBER; NUMERATION *pp: 3-7, 12-16, 20 Time: 18 days	Place value, read and write numerals through billions Exponential notation through 10^9 Exponential notation with bases other than 10 Rounding numbers to nearest million Roman numerals: dates, bar Prime and composite numbers Multiplicative inverse (reciprocal) Ratio Percent Set of integers
ADDITION AND SUBTRACTION OF WHOLE NUMBERS *pp: 4, 13 Time: 14 days	Sums of two or more addends; sums beyond 1 million Properties of addition Difference of two numbers each in the millions
MULTIPLICATION OF WHOLE NUMBERS *pp: 9, 13 Time: 15 days	Product of any whole numbers, and numbers named by 3-digit numerals Prime factorization Associative property and commutative property of multiplication; distributive property of multiplication over addition
DIVISION OF WHOLE NUMBERS *pp: 9, 13, 21 Time: 18 days	Standard algorithm: divisors named by 3-digit numerals Tests for divisibility by 2, 5, 10, 3

MATHEMATICS: GRADE 6, Scope and Sequence, Curriculum Bulletin, 1970-71 Series No. 4

MATHEMATICS - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FRACTIONAL NUMBERS *pp: 6,9,14,15,18,20,21 Time: 13 days	Greatest common factor Multiplicative inverse (reciprocal) Division of any fractional numbers Ratio Percent Properties of operations
FRACTIONAL NUMBERS IN DECIMAL FORM *pp: 8,10,11,12,16,17,18,20,21 Time 13 days	Decimal system through ten-thousandths Expanded notation through thousandths Relationships among fractions, decimal fractions, percents Sum and difference of fractional numbers in decimal form Multiplication of numbers in decimal form Division of numbers in decimal form Expressing fractional numbers in decimal form; numbers in decimal form as fractional numbers
GEOMETRY *pp: 5, 11, 14, 21 Time: 9 days	Concepts: perpendicular lines in a plane, a line intersecting a plane, a line parallel to a plane, a line perpendicular to a plane, skew lines Properties of regular polygons Properties of trapezoid, rhombus Concept of volume of a rectangular prism Experimenting in geometry with ruler and protractor

MATHEMATICS - GRADE 6

MEASUREMENT

*pp: 8,9,12,14,17,19,21
Time: 10 days

Linear: Circumference of a circle (about 3 times diameter)
Metric system; comparing with customary units of measure
Area: Formula for computing area of rectangular region
Relationships square inches-sqare feet; square feet-square yards $1 \text{ m}^2 = 10\,000 \text{ cm}^2$
Volume: Non-standard units
Standard unit - cubic inch - cubic centimeter
Computing volumes of rectangular solids by counting
Operations with measures, metric units
Constructing scale drawings, metric dimensions
Using protractor to draw and measure angles

ALGEBRAIC CONCEPTS

*pp: 3, 5, 7
Time: 7 days

Open sentences to describe the properties of operations
Using a formula to express a rule
Graph of solutions of an equation such as $\square + \Delta = 8$

SET OF INTEGERS: OPERATIONS

*pp: 12, 16, 22
Time: 3 days

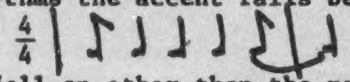
Addition on number line
Commutative property of addition

STATISTICS; PROBABILITY; GRAPHS

*pp: 4, 14, 21, 22
Time: 10 days

Median (odd and even number of cases)
Mean
Reading, interpreting, and constructing circle graphs
Reading and interpreting scale drawings
Experimenting with tossing a die; comparing experimental results with theoretical probability

MUSIC - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
RHYTHM *p. 15-18	Syncopation is an important element in jazz and Latin American Music. In syncopated rhythms the accent falls between the beats.  or accents fall on other than the regular metric accent.
SINGING * p. 20	The improvement of tone quality and intonation is an on-going objective. Singing intervals of fifths, thirds and fourths improves part singing. The Kodaly method indicates a specific hand signal for each step of the scale. Sing the first, third and fifth steps of the major scale together, produce the I chord.
LISTENING *p. 52-54 Interdisciplinary	The listening experience and the visual arts experience are intergrated to form an interdisciplinary experience. Paintings, sculpture, dance, and music are related in form and expressive qualities.
INSTRUMENTAL MUSIC	Classroom music is the means through which musical talent is identified. Musical instruments such as the clarinet, trumpet, violin, become part of the school orchestra or band. Single instrument instruction (violin class, clarinet class) is a recommended instructional procedure.

*TEACHING MUSIC GRADES 5 - 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CREATIVE *p. 90-91	Sound scores are performed with musical instruments and classroom instruments. Tape recorders with "sound on sound" features are an excellent creative musical tool. Composing and improvising can be based on the pentatonic scale (five tone scale).

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PHYSICAL EDUCATION - GRADE 6

CONTENT AREA AND TOPIC	
INDIVIDUAL, DUAL AND LEISURE SPORTS	
GYMNASTICS	
**APPARATUS	
BALANCE BEAM p. 355	Walk-with turn, with leg swing and turn. Walk-balancing object on head; holding object in hands; to center, kneel on one knee, stand and continue. Run-with short and fast steps forward One leg squat
ROPES *pp. 355-356	Climbing-using hands and feet; without foot grip; Swinging-double rope; single rope.
STUNTS *pp. 352-353	Coffee Grinder
TUMBLING *p. 354	Forward Roll from Run Cartwheel
TENNIS *pp. 388-392	Forehand Volley Backhand Volley --Against a wall; Over a Line; Over a Net; Ball Pitching Machine; Rebound Net; Stroke Developer Leadup Games--In the Air; Modified Tennis

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*PHYSICAL EDUCATION ON PRE K-6

**Spotting on Safety Procedures Must be Observed.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PHYSICAL FITNESS (AAHPER YOUTH FITNESS TEST) *pp. 444	Pull-Up Flexed Leg Sit-Up Shuttle Run Standing Broad Jump (Long Jump) 50 Yard Dash 600 Yard Run Walk
TEAM SPORTS	
BASKETBALL *pp. 359-365	Passing-long pass; two hand overhead pass Shooting-one hand push shot Dribbling Dribble and Pass Dribble and Shoot Lead-up Games: Basketball (Half-Court) Basketball (Modified Court) Captain Ball Competitive Foul Shooting Competitive Goal Shooting Line Basketball Shooting Relay
SOFTBALL *pp. 379-387	Fielding and Throwing a Ground Ball Fielding a Fly Ball Throwing to Home Plate from the Outfield Double Play Baseball Shuttle Flies Up Grounders Up One a Cat Playground Baseball

PHYSICAL EDUCATION - GRADE 6

CONTENT AREA AND TOPIC	
FLOOR HOCKEY	Goalie Technique (Defense) Hockey Strategy-position; rules Zone Hockey Floor Hockey .
FOOTBALL *pp. 369-373	Place Kick Catching a Forward Pass Association Football
SOCCER *pp. 374-378	Blocking Heading Goal Tending Simplified Soccer
TRACK AND FIELD	Standing Broad Jump Running Broad Jump Distance Throw 50-60-100 Yard Dashes 200 Yard Relay Lead-up Activities-Jump for Distance; Jump for Height; Target throws; Run and Jump; Baton Pass
VOLLEYBALL	Overhead Serve Underhand Serve Two-arm Bump Lead-up Games-Mass Volleyball; Over the Net -Modified Volleyball
DANCES *pp. 406-429	Folk dances give understanding about a country's culture.

All American Promenade (American)
Danza (Italian)
Donegal Round (Irish)
Double Quadrille***(Denmark)
High Life (Ghana)
Hora (Israel)
Jessie Polka (American)
Kalvelis*(Lithuanien)
La Cucarache (Mexican)
Road to the Isles (Scotland)
Siege of Ennis (Ireland)
Swedish Schottische***(Swedish)

***Basic Dances for Grade 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LIGHT, LENSES AND THE CAMERA *pp: 24-47 Time: 5 weeks	
Using Lenses	Lenses are made of transparent materials that have curved surfaces. A convex lens is a magnifier. A concave lens is a reducer. Optical instruments contain one or more lenses to help us see better.
Making a Picture	A convex lens projects an inverted image of an object. A pinhole may be used instead of a lens to form an inverted image. Blueprint paper and photographic paper are affected chemically by light resulting in permanent pictures of an image. In motion pictures each individual frame is slightly different from the one before it. Motion pictures seem to move because the eye blends each picture with the preceding and following one.
Using Cameras	A camera is a light-tight box with a lens and an opening for light. The lens forms an image on the film in a camera. The camera obtains an accurate visual record.
FROM THE SENSES TO THE BRAIN *pp: 48-72 Time: 7 weeks	
The Senses	Ears help us hear sounds. With light, our eyes help us to see. The skin receives sensations of touch. The sense of smell aids in tasting. The tongue senses sweet, sour, bitter, and salt. The brain interprets all the messages that it receives from the sense organs.

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*SCIENCE - GRADE 6, #6, 1971-72 Series

SCIENCE - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Keeping the Brain in Action	Protein foods are needed by the brain. The lungs take in air as we breathe. Air is necessary for the brain to function. The heart acts as a pump. Exercise increases the heartbeats and brings oxygen to all parts of the body.
MOLECULES AND ATOMS *pp: 125-158 Time: 5 weeks	
Everything is Made of Molecules	All substances are Made of molecules. Molecules are the smallest part of a substance and contain spaces between them in a substance. Molecules attract each other and are always moving. Molecules are far apart in gases, closer together in liquids, closest in solids.
Molecules Are Made of Atoms	Atoms make up molecules. About 100 atoms make up thousands of kinds of substances. Molecules are different from their atoms. When atoms are combined, there is a chemical change.
Atoms Are Made of Small Particles	An atom is made up of electrons whirling around a nucleus of protons and neutrons. Atoms of different elements differ in the number of particles of which they are made.

SCIENCE - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
THE OCEAN OF AIR *pp: 159-184 Time: 6 weeks	
The Air Around Us	Air is real; it occupies space, has weight, and exerts pressure. The higher we go in the atmosphere, the less the air pressure. Air contains nitrogen, oxygen, carbon dioxide, water vapor, and dust.
Going Up in the Atmosphere	We live at the bottom of an ocean of air. Balloons, jets, rockets, and satellites feed scientists information about the atmosphere. The atmosphere protects us from dangerous radiation from the sun.
MOVING IN AIR AND SPACE *pp: 185-211 Time: 7 weeks	
Moving In Air	Propellers pull a plane through the air. Jet action moves an airplane because the exploding gases inside the combustion chamber push harder against the front than against the rear of the chamber.
Environmental Hazards	Polluted air contains harmful substances which harm the lungs and make the heart work harder. A weakened heart sends less oxygen to the brain. Polluted water contains many harmful substances which affect many parts of the body and cause disease.

SCIENCE - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MAGNETS AND ELECTROMAGNETS *pp: 73-94 Time: 5 weeks	
Experimenting With Electromagnets	When electricity flows through a wire, a magnetic force is set up. The magnetism around such a wire can be concentrated by winding the wire to form a coil. The magnetism is increased by winding the coil on an iron core. To strengthen an electromagnet, increase the number of turns of wire, increase the electric current flowing through the wire, increase the size of the core. An electromagnet is a temporary magnet whose poles can be reversed.
Using Electromagnets	Electromagnets are found in many toys and appliances. Electromagnets allow motors, bells, telephones, and telegraphs to work.
THE STARS AND THE UNIVERSE *pp: 95-124 Time: 5 weeks	
Our Place In Space	The sun is a star. Stars vary in color, temperature, size, and distance from the earth. The rotation of the earth on its axis and the revolution of the earth around the sun affect our view of the stars and constellations. Constellations are groups of stars that form patterns and appear different in shape from different positions in space.

SCIENCE - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Space has depth. The Milky Way is one of the many galaxies that form the universe and within which the solar system is located.
Observing the Night Sky	Stars are different in brightness and color. Stars appear in different parts of the sky during the different seasons and appear to move across the sky during the night. Stars are located at different distances from the earth. Constellations help to locate stars in the sky.
Moving In Space	Lift is the result of the greater push (force) on the underside of the wing as compared to the top of the wing. Rockets have made space travel possible. A satellite must move at the right speed to stay in orbit. Satellites maintain their speed in orbits because there is no air to slow them. On the way to the moon, a spaceship is slowed by the pull of the earth's gravity.

SOCIAL STUDIES - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
OUR WORLD: EARLY CIVILIZATIONS	
HOW WE LEARN ABOUT THE PAST *pp. 2-3 Time: 4 weeks	We learn about the past from the work of social scientists such as archeologists.
Sources of Information	Information is obtained from many sources such as artifacts, oral traditions, and written records.
Work of Archeologists, Historians, and Anthropologists	Archeologists recreate the past from artifacts and material remains; historians from primary and secondary sources; anthropologists from direct observation techniques.
HOW MODERN PEOPLE (HOMO-SAPIENS) DEVELOPED *pp. 3-4 Time: 4 weeks	There was a lengthy period before man's appearance on earth. We record historical time in various ways. There were several forms of early man. All modern humans are homo sapiens. There are racial similarities and differences; humans are much more alike than different.
HOW WESTERN CIVILIZATION DEVELOPED *pp. 4-7 Time: 14 weeks Note: Select one of the following topics:	
HOW WESTERN CIVILIZATION DEVELOPED IN EGYPT OR GREECE OR MESEPOTAMIA OR ANOTHER MIDDLE EAST AREA	
How Civilization Developed in Egypt (Sample Case Study Approach)	
Geographic Factors Influenced the Development of Civilization	Egypt is the "gift of the Nile"

*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 6

SOCIAL STUDIES - GRADE 6

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Government Developed to Meet the Needs of the Individual and of Society	Absolute monarchy and a rigid social class system developed.
Laws Provide a Picture of the Society	The Egyptian "Book of The Dead" reflects the moral and spiritial values of the society.
Contributions Have Helped to Shape Present Ways of Life	Egyptians made numerous contributions, including a system of writing, sculpture, and architecture.
Art and Literature Reflect the Society	Egyptian art in stone reflects the wealth of society.
Note: Select two of the following topics	
HOW CIVILIZATION DEVELOPED IN INDIA OR CHINA OR PRE-COLUMBIAN AMERICA OR AFRICA Time: 16 weeks	See the sample case study for sub-topics.
SKILLS	Vocabulary of time expression is used. Related events are placed in chronological order. Footnotes are made. Cross references are used.

SCOPE AND SEQUENCE

GRADE 7

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ART -GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DRAWING **pp. 4-5 Time: 6-9 Weeks The Contour Line	A sketch shows an economy of line. Lines define and enclose space. Objects can be drawn with an unbroken line that flows around the outside edges and inner forms of the object. A line can record a rhythm. Lines can depict the form of any growing thing. Accurate proportion is not essential.
PAINTING **pp: 10-11 Time: 6-9 Weeks Changing Colors	Pastel tones are created by adding colors to white. A darker hue is obtained by adding a touch of black to any color. Repetition of colors gives unity to a composition. Contrasting colors make ideas clear. Free form shapes, simple closed curves, and patterned areas are produced by different combinations of colors.
DESIGNING IN TWO DIMENSIONS **pp: 23-24 Time: 4-6 Weeks The Abstract Collage	Composition, color, texture, and pattern are elements in two-dimensional design. Magazines are a source for colored papers and cutouts. Paper shapes can vary in size, overlap, contrast, and be repeated. Background shapes and colors are part of the design. All parts contribute to the effectiveness of the design. Collages may be used to decorate other surfaces, such as boxes. A collage may be finished with shellac or varnish.

** ART FOR THE MIDDLE SCHOOL, Grades 5,6,7,8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DESIGNING IN THREE DIMENSIONS **pp: 34-35 Time: 6-9 Weeks	
Abstract Forms in Space	Wood and/or plastic pieces vary in shape and size. Arrangements are tried before gluing parts in place. Forms or structures thrust upward into space. Light and shadow create pattern within the structure. Paint adds color,pattern, and texture to the design.
Constructing with Wood and Plastics	All purpose white glue is essential. Materials consist of spools, pop sticks,pieces from discarded toys and games,scrap wood, wire, and plastic pieces in assorted sizes and shapes.
PRINTMAKING **pp: 46-48 Time: 4-6 Weeks	
The Monoprint	Glass,hardboard,wood,or plastic can serve as a printing plate. Water soluble ink is used on the printing plate. A rubber roller is a necessary tool. Cut or torn pieces of paper and/or fabric create design and texture for the paper rubbing.
Patterning with Objects	The repetition of shape creates a pattern. Found objects provide interesting shapes and textures. Stamping an inked object on paper produces regular rows or irregular rhythmic patterns.
Relief Printing	Shapes cut from cardboard or other heavy paper can be glued to background board. Felt,yarn,string,or other flat objects can be used in design of print. In order to print, cardboard and fabric plate must be inked.

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ART - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
POSTERMAKING **pp: 58-59 Time: 4-6 Weeks Combining the Symbol and the Message Into the Design	Words and symbols combine to communicate ideas. Posters announce events, advertise a personality, or publicize ideas. Shapes or strips cut from construction paper or overlays of transparent papers add emphasis and color. Mixed media are often used in poster designs. Poster design is striking in its simplicity. The illustration and the hand lettered message are closely related. The message or slogan in a poster is brief. A trade_mark is a design. Printmaking techniques can be used to duplicate a poster.
THE PUPPET PERFORMANCE **pp: 66-67 Time 6-8 Weeks Performance and Integration of the Arts	Puppet characters express human emotions and feelings. Puppets, stage, and scenery present problems in design. Art and music, as well as the dramatic and language arts, are integrated in the puppet performance.
Sock, Stick, and Shadow Puppets	The movement of the sock puppet suggests various human or animal forms. Exaggerated details make the sock puppet more attractive. Puppets can take the form of a simple figure on a stick or an elaborate construction with several movable parts. More than one stick is used to manipulate movable parts. A strong outline or contour makes shadow puppets more dramatic. Shadow puppets frequently have moving parts. The light source (slide projector) is placed in back of the puppets so that they cast shadows on the screen.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PHOTOGRAPHY **pp: 76-77 Time: 4-6 Weeks	
Montage	Photographs are cut up and combined to illustrata a theme for a montage. Photographic printing paper can be "painted" upon with brush and photographic developer.
Photogram	Objects arranged on photographic paper produce photogram images. Opaque objects placed on coated blueprint paper and exposed to sunlight produce images.
Light Show	Color slides of random subject can be arranged in a unique sequence. Projected images from two or more slide projectors can be combined. Theatrical gelatins or colored cellophanes,placed in the path of light,color the image on the screen. The addition of recorded music,or live sound,creates a multimedia effect.
FILMMAKING **pp: 86-87 Time: 4-6 Weeks	
Equipment	Super 8 cameras use 8mm film. Students share equipment the group will use to make a film. Films are about subjects such as places,events,feelings, and ideas. The overall theme provides unity when the segments are joined in the completed film.
Sequence and Editing	Not all scenes are used in a completed film. Scenes are cut and arranged to make an interesting visual statement. Films require editing. Sound can change the impact and meaning of a film.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
COSTUME DESIGN **pp: 96-97 Time: 4-6 Weeks	
Design Sources	Variety and beauty of design are found in the dress of different cultures. Works of art can serve as a source for design ideas.
Pattern Effects	Fabrics exist in a wide variety of patterns, such as prints, plaids, checks, and stripes. Patterned and plain materials are combined in a complete outfit. Some patterns seem to exaggerate size while others seem to minimize size. Pattern design affects the total look of a costume. Line direction is an important aspect of pattern design. Fabric design can be based on a motif.

ENGLISH LANGUAGE ARTS - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE Myth Short Story Novel Biography *p. 224 - 228	Content Mythological deities possess qualities which mirror human attributes, virtues, and frailities. The understanding of literature is a help in the understanding of self. Personal values are clarified and strengthened by the wide reading of literature. Responsibility to the family unit is developed and reinforced by the study of literature.
Short Story Novel *p. 241 *pp. 245 - 246	Form The use of flashback is a method of plot development. The subplot is a method of enriching and supplying a contrast to the main plot. Characters are depicted from the author's point of view and through the eyes of the other characters.
Poetry *p. 242 *pp. 254 - 257	Different speech sounds such as sibilants and plosives contribute to the overall effect of a poem. The rhyme may be organized in regular patterns: aa, bb, etc; abab; abcb, and the like. Personification is a figure of speech in which human attributes are given to inanimate things or animals.
Biography *p. 261	The author of a biography may present a personal or biased point of view about the subject.
Essay *p. 244	The story essay is a form often used to present a moral.

*HANDBOOK FOR ENGLISH LANGUAGE ARTS READING AND LITERATURE GRADES 5 - 12

**HANDBOOK FOR ENGLISH LANGUAGE ARTS SPEECH AND COMPOSITION GRADES 5 - 12

***HANDBOOK FOR ENGLISH LANGUAGE ARTS LANGUAGE STRAND GRADES 5 - 12

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WRITING	
Words and Expression **p. 178	Words have an emotive force. Transitions and connectives are used to relate ideas. Modifiers are placed as close as possible to the words they modify to enhance clarity.
Sentences **p. 178	More effective sentences can be developed through the use of phrases and clauses.
Paragraphs **p. 179	Topic sentences and supportive sentences form the structure of a paragraph. In an expository paragraph the most important points come first followed by the less important in rank order or vice versa.
Multi-paragraph Compositions **p. 180	A new paragraph begins when there is a change of characters, place, or idea.
Letters **p. 180	Letters to friends are an excellent way to communicate personal experiences.
Research and Library Techniques **p. 180 - 181	Ideas which come from other sources must be documented by quotation marks and reference to the original source.

ENGLISH LANGUAGE ARTS - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LANGUAGE	
Grammar ***p. 19	There are basic sentence patterns: S-V S-V-O S-V-IO-O S-LV-PA S-LV-PN or PP S-V-O-OC S-LV-Adv Adjectives and adverbs can be inflected: positive, comparative, superlative.
Semantics ***p. 85	Informed opinion is the personal opinion of an expert in that field.
***p. 80	Objective reporting is complete and avoids slanted words, propaganda, and a personal point of view.
Vocabulary ***p. 148	Many English words have foreign derivations.
Spelling ***p. 206	Words can be hyphenated between syllables at the end of a line. The Basic List of Spelling Words contains words words appropriate for each grade.
SPEECH AND SPEECH ARTS	
**p. 31	Good voice production includes respiration, phonation, resonance,and articulation.
**p. 40	Parliamentary procedure is an effective method of conducting a meeting involving set rules for order, voting, elections, and the like.

LIBRARY-MEDIA GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ORIENTATION (if entering grade in junior high school)	Tours, diagrams, special assignments and floor plans explain facilities, resources and circulation procedures.
ORGANIZATION	Magazines and newspapers on microfilm are identified. New York Times Index is used to locate specific information.
USE	Specialized references, e.g., Dictionary of American Biography, Van Nostrand's Science Dictionary give detailed information for specific subjects.
INTERPRETATION	Facts and ideas are inferred from reading, listening and viewing. Generalizations are made from statistical and narrative data. Sources are evaluated for accuracy. Distinction is made between fact and opinion. Unsubstantiated statements are identified. Adolescent growth process is explored through literature written specifically for the teenager.
	Application of the foregoing skills to increasingly complex materials involving the use of these skills in a variety of subject contexts is the focus of the library-media skills program in grades 8 and 9.

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MATHEMATICS - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBERS AND NUMERALS *pp: 1-38 Time: 12 days	Sets; one-to-one correspondence; sets and numbers; equivalent and equal sets; Roman numeration system; Hindu Arabic notation; base ten; expanded numeral; exponents; place value; number bases; base five
OPERATIONS AND PROPERTIES OF WHOLE NUMBERS *pp: 39-96 Time: 15 days	Sets and addition; union of sets; properties of addition; subtraction proof; problem solving involving addition and subtraction; multiplication and sets; properties of multiplication; distributive property; short form of division; divisors greater than 99; problem solving involving multiplication and division
NON-METRIC GEOMETRY *pp: 97-138 Time: 12 days	Points and space; line segments and lines; rays and angles; planes; planes and lines; simple closed curves; polygons; parallel lines; space figures
FACTORING *pp: 139-161 Time: 4 days	Intersection of sets; Venn diagrams; factors divisibliity; prime numbers; composite numbers; unique factorization property; greatest common factor
RATIONAL NUMBERS MULTIPLICATION AND DIVISION *pp: 162-212 Time: 16 days	Meaning of rational numbers; fractions and rational numbers; multiplication of rational numbers; properties of multiplication; simplest form; least common multiple; comparing rational numbers; rational numbers and the number line; density property; mixed fractional form; reciprocal (multiplicative inverse); division by one; rational numbers in division

MATHEMATICS: GRADE 7, Scope and Sequence, Curriculum Bulletin, 1966-67 Series No. 3a and 3b

MATHEMATICS - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
RATIONAL NUMBERS (ADDITION AND SUBTRACTION) *pp: 213-256 Time: 12 days	Addition of rational numbers; least common denominator; properties of addition; using the distributive property; subtraction of rational numbers; ratio
OPEN SENTENCES *pp: 257-272 Time: 5 days	Meaning of open sentence; replacement set; variable; solving an open sentence; solution set; graphing the solution set of an open sentence
RATIONAL NUMBERS: DECIMAL FORM *pp: 273-306 Time: 8 days	Extending decimal notation; equivalent decimals; comparing decimals; rounding; addition; subtraction, multiplication; division; renaming the dividend
MEASUREMENT *pp: 307-383 Time: 21 days	Linear measure; approximate nature of measurement; metric system; perimeter of polygon; circumference of a circle; square measure; area of a rectangular region; area of a square region; angle measurement; vertical complementary, supplementary angles
RATIONAL NUMBERS: PER CENT FORM *pp: 384-414 Time: 10 days	Per cent as ratio; relating decimal numerals, fractions and per cent forms; finding a per cent of a number; per cent problems; finding what per cent one number is of another; discount; commission; simple interest
GRAPHS *pp: 415-440 Time: 6 days	Multiple bar; multiple line; rectangle; circle

CONTENT AREA NAD TOPIC	SKILLS AND KNOWLEDGE
THE SET OF INTEGERS *pp: 441-456 Time: 3 days	A need for new numbers; negative integers; positive integers; set of integers; integers and the number line; order in the set of integers; addition of integers

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MUSIC - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MAJOR ELECTIVE	
Vocal Techniques	Quality vocal music is based on a number of vocal techniques, e.g., breathing, posture, direction, diction, interval singing. The song repetoire should contain both unison singing and part singing (two and three part songs) traditional and popular. Folk songs, popular songs and folk rock songs also provide the basic material for musical development
The School Chorus	A school chorus plays an important role in the school.
MAJOR ELECTIVE	
Bands, Orchestras and Instrumental Music	Bands, orchestras and instrumental music classes are important elements in a school's total curriculum. Instrumental music classes provide fundamental instruction in the techniques of playing. Bands, Orchestras and Choruses are important for the talented musicians and for total student population by performing for assemblies, school concerts, graduation and sporting events.
MUSIC APPRECIATION	Music Appreciation touches on all the components of music education, e.g., listening, music reading, rhythm and melodic notation, music history, singing and instrumental music experiences.
Basic Music Elements	

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PHYSICAL EDUCATION - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PHYSICAL FITNESS TESTS	Achievement of Physical Fitness Levels Necessary to Pass National, State and Local Standardized Tests.
AAHPER Youth Fitness Test	Pull-Ups, Sit-Ups, Flexed Arm Hang, Shuttle Run, Standing Broad Jump, 50-Yard Dash, 600-Yard Walk-Run
N.Y.S. Physical Fitness Test	Posture, Accuracy Throw, Strength, Agility, Speed, Balance, Endurance
DANCE	
SQUARE DANCE	
Basic Steps and Movements	Hand Turns, Swing Left and Right, Forward and Back, Promenade, Corners and Partners Positions, Honor Your Partner, Do-Si-Do, Allemande, Grand, Star, Ladies Chain, Right and Left Through, Pass Through, California Twirl, Lead Through, Buzz Steps, Chasse, Grapevine Twist, Dixie Chain
INDIVIDUAL, DUAL AND LEISURE TIME SPORTS	
ARCHERY	
Basic Skills	Bracing the Bow The Stance Nocking the Arrow The Draw The Anchor Aiming--Basic Method Point of Aim Method The Loose or Release Follow Through or After Hold Shooting on Command

PHYSICAL EDUCATION - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
GYMNASTICS	
Parallel Bars	Dips, Cross Rest to Straddle Seat, Straddle Travels, Front and Rear Dismounts
Uneven Parallel Bars	Mount to Arm Support, Straight Arm Support, Squat Stand Mount, Chinning
Horizontal Bar	Pull-ups, Skin the Cat, Leg Raise to Tuck, Forward and Backward Swing, Swing Back Dismount
Side Horse	Squat Vault, Front Vault, Front Rest Support, Back Rest Support, Feint
Long Horse Vaulting	Jump to Squat, Walk to End, Jump Off Jump to Straight Leg Stand, Walk to End, Jump Off
TUMBLING AND FLOOR EXERCISES	Forward Roll, Backward Roll, Combination Rolls, Back Bend, Front Scale
Rebound Tumbling (Trampolining)	Mount and Dismount, Bounce and Break, Bounce with Direction Change, Knee Bounce, Knee Drop
Rope Climbing	Skin the Cat, Crab Hang, Inverted Hang, Basic Climbing Position, Climb One-Quarter Way Up
HANDBALL	Stance and Footwork, Basic Strokes, Serve, Basic Shots, Game Strategy
PADDLE BALL	Grips, Swings, Stance and Footwork, Basic Shots, Serves, Game Strategy

PHYSICAL EDUCATION - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
INDIVIDUAL, DUAL AND LEISURE TIME SPORTS	
TENNIS	
Basic Strokes	Forehand and Backhand--Grip, Stance and Swing
	Serve--Grip, Stance, Ball and Racquette Coordination
	Game Play Situation Play
TRACK AND FIELD	
Sprints	Starts--Indoor and Outdoor
	Running Form--Use of Arms, Stride
Relay Racing	Baton Pass-Visual
Long Jump	Standing Long Jump
High Jump	Scissors
TEAM SPORTS	
BASEBALL AND SOFTBALL	Catching--Low and High Balls
	Throwing--Overhead Snap, Infielder's Sidearm, Underhand Toss
Basic Skills	Fielding--Flyball and Ground Ball
	Pitching (Softball)--Fast Ball, Slow Ball
	Pitching (Hardball)--Overarm, Three-Quarter Arm
	Batting--Straight Away
	Base Running--Run to First Base and Turn, Steal
	Defensive Skills--Infield and Outfield

PHYSICAL EDUCATION - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
TEAM SPORTS	
BASKETBALL	
Basic Skills	Catching--Above and Below the Waist Passing--Two Hand Chest, Two Hand Bounce, Underhand, Hand-Off Shots--Layup Right and Left, One Hand Set, Foul Dribbling--Straight Away, Change of Hand Defensive Skills--Basic Stance, Sideward Shuffle, Elements and Theory of Man-To-Man and Zone Defenses Offensive Skills--Give and Go, Attacking the 2-1-2 Zone
SOCCER	
Basic Skills	Dribbling--Inside, Outside of Foot Heading-Forward Throw-In--Feet Together, One Foot Advanced Tackling--Basic Stance, One Leg Tackle Kicking--Inside of Foot Straight And Sideways, Short Push Pass Trapping--Wedge, Chest Goal Keeping--Stance and Catching Game Situation Play
COMBATIVES	
WRESTLING	
Basic Position and Drills	Special Conditioning Drills Top and Bottom Referees Positions Floating and Spinning Drills Situation Drills

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Holds and Counters	Far Ankle, Far Arm Breakdown to Half Nelson or Crotch Pin Side Roll to Counter, Bridge and Turn-Into Counter Sit-Out and Turn-In to Counter Sit-Out Far Ankle Drive to Waist Lock Snap-Back Counter to Sit-Out and Turn-In Wing and Step Over Counter to Half Nelson Near Arm and Waist Lock Flatten-Out Counter for Side Roll Head Pry Level Rock of Gibraltar
Culminating Activities	Intra Squad and Intramural Tournaments
PHYSICAL FITNESS, CONDITIONING AND BODY MECHANICS	
CALISTHENICS	Understanding of Role of Calisthenics as Remedial, Warm-Up and Conditioning Activity
Isotonic Exercises	Push-Ups, Squat Thrust, Sit-Ups, Jumping Jacks, Modified Pull-Ups, Running in Place, Knee Raise
Isometric Exercises	Contractions Held for 6 to 10 Seconds With Two Second Rest Between Contractions Press Hands Together Overhead, Hands Hooked at Chest--Pull Apart, Pressing Palms Against Hips, Sitting Position. Press Hands Against Floor
WEIGHT TRAINING	Understand Value of Resistive Exercises in Achieving Physical Fitness High Pull-Ups, Two Arm Standing Curls, Two Arm Standing Press
CIRCUIT TRAINING	Pull-Ups, Squat Thrusts, Step-Ups, Alternate Presses, Sit-Ups, Dips on Parallel Bars, Shuttle Run, Barbell Curl, Running In Place

SCIENCE - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CHEMISTRY	
ELEMENTS *pp: 1-21 Time: 7 periods	
The Study of Matter	Matter is anything that has weight and occupies space. The states of matter are solid, liquid, and gas. Change in state of matter is accomplished by adding and removing energy and occurs at specific temperature. Various instruments (rulers, spring scale, triple beam balance, graduate cylinder) are used to measure quantities of matter. Laboratory investigations concerning heating and cooling of matter help to identify changes in state.
Matter Can Be Identified By Its Appearance	Characteristics and behavior of different substances are known as properties. The study of properties helps to identify different substances.
The Building Blocks of Matter are Elements	An element is the simplest substance which still retains the properties of that element. They occur as solids, liquids, and gases. The study of the properties of some elements helps to identify different elements. Elements are classified as metals and non-metals. The properties of metals and non-metals aid in identifying these substances.
The Arrangement of Elements In the Periodic Table	All elements are listed in a special order and sequence called the Period Table. The scientific notation, place, and position relate to the atomic structure and properties.

*SCIENCE - GRADE 7, 71-72 Series, #2

SCIENCE - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
COMPOUNDS AND MIXTURES *pp: 22-48 Time: 7 periods	
Combining Elements to Form Compounds	Elements combine in definite proportions to form new substances called compounds. The properties of compounds are different from those of the elements that make up the compounds. Compounds may be broken down into their original elements by replacement or decomposition reactions. The smallest part of a compound that still has the properties of the compound is a molecule. The oxidation of an element is used to study the formation of a compound.
Chemical and Physical Change	A physical change is a change in size, shape, or state. A chemical change results in the formation of a new substance with new properties. The study of different physical and chemical changes helps to identify the substances formed.
The Characteristics of Mixtures	Mixtures consist of two or more substances each of which retains its own properties. Mixtures involve a physical change only; there is no definite ratio or proportion between the amounts of each substance. The parts that make up a mixture can be separated by various techniques.

SCIENCE - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ATOMIC THEORY *pp: 49-75 Time: 8 periods	
The Structure of the Atom	The work of various scientists (Dalton, Rutherford, Chadwick, Bohr) helped to develop the concept of the structure of the atom. Atoms are composed of protons, neutrons, and electrons. Protons are positively charged; electrons are negatively charged. Like charges repel; unlike charges attract. Atomic weight, atomic number, properties, and combining ability relate to the behavior of the atomic particles. The study of a number of different atoms help to explain the formation of compounds.
PHYSICS	
ELECTRICITY *pp: 87-108 Time: 8 periods	
Electric Current	An electric current is a flow of electrons from the negative to positive terminals. Laboratory investigations dealing with series and parellel circuits compare the different paths each follow.
Resistance	The resistance of a wire carrying an electric current is related to its length, thickness, and composition.
Measurement of an Electric Current	The voltmeter, ammeter, and the ohmmeter are useful instruments in measuring the electromotive force, the current, and the resistance of electrical circuits. The formula V=IR expresses the relationship between volts, amps, and ohms.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MAGNETISM *pp: 109-136 Time: 9 periods	
The Characteristics of Magnets	Magnets are made of iron, nickel, and cobalt. Magnets are strongest at the poles. A magnetic field surrounds all magnets. Like magnetic poles repel, unlike poles attract.
Making and Destroying Magnets	Magnets may be created by electrical induction or contact with other magnets. Magnets may be destroyed by heating, hammering, or rubbing in different directions.
Earth's Magnetic Field and The Compass	Because of the nature of the earth's core, the earth acts as a huge magnet. A magnetic compass responds to the earth's magnetic field and helps us determine direction.
Electromagnetism	A coil of wire carrying an electric current and surrounding a soft iron core will induce a temporary magnetism in the core. The strength of an electromagnet depends on the number of turns of wire, the amount of current, and the size of the iron core. Electromagnets are used in bells, buzzers, loudspeakers, and scrap iron lifts.
Creating An Electrical Current	The movement of a permanent magnet in a coil of wire induces an electrical current. This principle explains the operation of motors and generators.

SCIENCE - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HEAT *pp: 137-150 Time: 6 periods	
Heat Affects the Size of Matter	When heated, matter will expand. Heat, a form of energy, is due to the motion of all its molecules. Thermometers (Celcius and Fahrenheit) are used to measure temperature.
Heat Can Be Transferred	Heat may be transferred by radiation, conduction, and convection.
Measurement of Heat	Heat is measured in the metric system units called calories.
BIOLOGY *pp: 161-176 Time: 6 periods	
LIVING THINGS	
Life Activities	Living things carry out a variety of life functions which include digestion, respiration, circulation, movement, response, growth and reproduction. The microscope helps us to study living things too small to be seen with our eyes.
Identifying the Needs of Living Things	Plants and animals have basic needs such as food, water, air, and a proper environmental temperature to carry on life activities. Controlled investigations with plant and animal organisms confirm similarities of life functions of all living things.

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SCIENCE - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
THE STUDY OF THE CELL *pp: 177-194 Time: 7 periods	
The Structure and Function of Cells	Living things are composed of one or more cells. Cells contain small units which have specific functions. A study of plant and animal cells shows they differ in many ways.
Multicellular Organisms	In higher forms, cells become specialized to perform specific functions. A study and comparison of different cells (bone, muscle, nerve, and blood) help to identify the specialized functions.
Cells are Organized Into Tissues and Organs	A group of cells, similar in structure and function, is called a tissue. Different tissues are organized to work together to form an organ. Each body organ has a specific function to perform.
Organ Systems	The study and understanding of the major organ systems helps us to identify life functions and maintain good health.
NUTRITION *pp: 196-222 Time: 10 periods	
Foods Contain Useful Substances	Food contains useful substances called nutrients. The nutrients required by living things include carbohydrates, proteins, water, minerals, and vitamins. Specific tests may be performed to identify nutrients in different foods.

SCIENCE - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Nutrients Help to Maintain Life Functions	Green plants synthesize the nutrients necessary for life activities by a process called photosynthesis. Controlled experiments are conducted to demonstrate a plant's dependance on chlorophyll. The nutrients supply us with materials for growth, repair, and maintenance of good health.
A Balanced Diet	Planning a balanced diet is one that includes all necessary nutrients in sufficient quantities to maintain good health.
EARTH SCIENCE	
ROCKS AND MINERALS *pp: 230-255 Time: 9 periods	
The Structure of the Earth	The earth is made up of four layers; crust, mantle, outer core, and inner core. Identifying the characteristics and the composition of the layers help to understand how the earth was formed.
The Composition of the Earth's Crust	The earth's crust is made up of rocks and minerals. Rocks may be identified by the minerals present in the rocks. Various techniques and properties are used to identify different minerals. These include color, luster, hardness, streak, density, and cleavage.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Formation and Identification of Igneous, Metamorphic, and Sedimentary Rocks	The methods by which rocks were formed, their mineral content, composition, crystal size, appearance, and properties provide a means of classification and identification of various rocks. Rocks are identified according to their characteristics.
THE CHANGING EARTH *pp: 258-285 Time: 9 periods	
Factors Which Cause the Earth's Surface to Change	The surface of the earth is constantly being worn down physically and chemically by wind, water, plants and animals, chemicals, and glaciers. The study and understanding of processes of erosion, weathering, freezing and thawing, dune migration, wave movement, and glacial movements help to explain how the earth's surface is worn down.
Building Up the Earth's Crust	Pressure, heat, and movements of the earth's crust causes folding and formation of mountains. Lava flows from volcanoes and molten magma within the earth also help to build up the surface of the earth's crust. Many techniques are used to identify the evidences of changes in the earth's surface.
THE IMPORTANCE OF FOSSILS	
Fossil Remains	Fossils are the remains or evidence of plants and animals that lived on this earth in the past.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Fossils are formed from the hard parts of plants and animals, impressions or casts left by them, or by replacement of the original structure with minerals (petrification). Some insects and animals have been trapped in tar pits and resin which have preserved their remains.
	The identification of various fossils and a comparison with present forms provide us with evidence of evolutionary change, past climates, environmental conditions, and movements of the earth's surface.
	Index fossils may be used to develop a geological timetable.
Fossil Fuels	Coal and petroleum are the end products of a process which changed plants and marine organisms into fuels.
	The recognition that when plants are heated in a testube in the laboratory they form charcoal (carbon) serves as link to how fuels are formed.

SOCIAL STUDIES - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
AMERICAN HISTORY: HISTORICAL DEVELOPMENT OF THE UNITED STATES	Note: Content Area covers the Colonial Era to about 1900. Urban America in the 20th Century should be taught in the first half of Grade Eight.
WHY PEOPLE MOVED TO THE NEW WORLD *pp. 3-5 Time: 5-6 weeks	
Voluntary Movements of People to the New World	People moved to the New World for many political, social, and economic reasons.
Involuntary Movement of People to the New World	Africans, prisoners, and some indentured servants came to the English colonies involuntarily.
HOW PERMANENT SETTLEMENTS WERE FORMED IN THE NEW WORLD *pp Time: 6-7 weeks	
Developments in the Thirteen Colonies	Self-governing colonies, proprietary colonies, and royal colonies were similar and different in their reasons for settlement, living conditions, nature of government, degree of political freedom, people, and their backgrounds.
HOW THE THIRTEEN COLONIES BECAME ONE NATION *pp. 5-7 Time: 6-7 weeks	Numerous political, economic and ideological causes led to the American Revolution.

*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 7

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Factors Affecting the Conduct of the Revolutionary War	The conduct of the war was affected by various factors such as the role of national leaders, the role of minority groups, the military campaigns, and international rivalries.
Results of the Revolution	The Revolution had many results such as independence, territorial expansion, extension of democratic rights in new state constitutions, and inspiration to peoples in other lands.
HOW AMERICA GREW IN A CHANGING POLITICAL CLIMATE *pp. 7-9 Time: 18-20 weeks	
The Frontier Moves West	The explorer, pioneer, settler, and towns person played important roles in the development of frontier communities.
Jeffersonian Democracy (1800-1824)	Several highlights of the Jeffersonian Era are the Louisiana Purchase, the War of 1812, the "Era of Good Feeling," the growth of sectionalism.
Jacksonian Democracy (1828-1848)	The era of Jacksonian democracy is highlighted by the political struggles of President Jackson and the humanitarian movements in education; care of the sick, insane, criminal and needy; anti-slavery protests.
Manifest Destiny and The Extension of Slavery	The nation grew through the acquisition of Texas, the Mexican Cession, and Oregon. Territorial expansion deepened the political and economic conflicts between Slave and Free States.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
The Civil War	The road to Civil War was marked by the Kansas-Nebraska Act, the Dred Scott Decision, the split in the Democratic Party, the Election of 1860. There are various economic, political, and social causes leading to the Civil War. The human and material costs of the war were great. Among the results of the Civil War are the end of slavery; economic and political effects of the war on the North, South and West; problems and achievements in the era of Reconstruction.
Major Trends in Post-Civil War America	The Big Business Era (1877-1890) was marked by the end of the frontier, the growth of corporate business and labor unions, large-scale European immigration; rapid growth of cities and industries.
Reform Movements In The Late 19th and Early Early 20th Centuries	The Populist Era (1890-1895) was marked by the political and economic efforts of farmers and city workers to correct grievances against corporate wealth and power. The muckrakers and social reformers in the cities attempted to correct political, economic, and social abuses that resulted from industrialization and urbanization. The first Progressive Era (1900-1916) was marked by the efforts of Presidents Theodore Roosevelt and William H. Taft to create a better balance between the economic and political strengths of big business, labor and agriculture through government regulation. The purpose of Woodrow Wilson's "New Freedom" (1913-1916) was to afford greater economic, political, and social justice to all Americans through government regulation.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SKILLS	The Reader's Guide is used to find articles in periodicals. Parliamentary procedures are used to conduct meetings.

SCOPE AND SEQUENCE

GRADE 8

ART - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DRAWING	
**pp: 6-8	
Time: 6-9 Weeks	
The Contour Line	A portrait or object can be described by a continuous uninterrupted line. A line may follow outside and inside edges.
Size,Shape,and Proportion	Proportions can be exaggerated to achieve special effects. A variety of geometric shapes can be used as elements in design. People,objects,rooms,and landscapes possess geometrical shapes. Overlapping shapes add interest to a composition. Varying the sizes of shapes and repeating them enhances the design. Size and position of an object indicate its importance.
PAINTING	
**pp: 10-12	
Time: 6-9 Weeks	
Color and Movement	Patterns of color can express movement and rhythm in painting. Broad strokes of color which create lines and shapes may suggest a particular movement. A painting need not portray a recognizable object. A painting can illustrate an idea or abstraction,such as happiness, excitement,or speeding. Patterns of dark and light are important elements in the design of a painting.

** ART FOR THE MIDDLE SCHOOL, Grades 5,6,7,8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DESIGNING IN TWO DIMENSIONS **pp: 28-29 Time: 4-6 Weeks	
Tie Dying	Tie dying and batik employ concepts of color and design. Knotting or folding the cloth and tying the folds in place are required to assure dry areas when the cloth is immersed. Random color effects,or design patterns are created by the dye bath.
Batik	Melted wax will impregnate cloth. Crinkling the cloth creates cracks in the waxed surface. The dye bath penetrates the cracks to color the cloth. The trace of wax that remains is characteristic of batik fabric. Accidental effects add interest to designs.
DESIGNING IN THREE DIMENSIONS **pp: 38-40 Time: 4-6 Weeks	
Modeling with Clay	Clay is a plastic material;its shape and texture can be manipulated. Clay coils are arranged according to design of construction. Abstract forms suggest flight,conflict,rhythm,etc. Other parts may be added to the main lump of clay by scoring and the use of slip. Compact,sturdy shapes survive firing and glazing. Tools create texture and refine shapes.
Other Ways to Model	Fabrics dipped in starch or plaster of paris over a support of wire harden to form a sculpture. Paper mash is used to model small pieces that harden when dry.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PRINTMAKING **pp: 48-52 Time: 4-6 Weeks Making and Printing a Stencil	Cutting a shape from lightweight cardboard produces 2 stencils; the cutout,or positive shape, and the background,or negative shape. Stippling,spattering, or rolling will all produce an image from a stencil. A stencil can be used many times to repeat an image. Different stencils can be used together to create overlapping designs.
Relief Printing	Linoleum cutting requires straight chisels,V,and U shaped gouges. Cut away areas do not print. Ink is applied from the inking slab onto the linoleum block with a roller. Varying the pressure on the paper, the amount of ink on the block,or the texture of the paper changes the effect of the print.
Screen Printing	Ink is forced through a tightly stretched mesh with a squeegee. A stencil adhered to the underside of the mesh blocks the ink. Color is transferred through the open or unblocked areas of the screen or mesh to the paper placed below . The blocked area remains the color of the original paper. The frame for the screen is made from wooden canvas stretchers, a discarded picture frame,or is constructed from heavy cardboard. Printing paper is always larger than the stencil so that wet prints can be handled and so that margins can be trimmed.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LETTERING, POSTERMAKING, AND ADVERTISING **pp: 60-62 Time: 4-6 Weeks	
Lettering and Meaning	Different designs emphasize the decorative, psychological, and communicative potentialities of the lettered word. The style of lettering can suggest the meaning of a word. The expressive quality of color adds to the impact of meaning. Unusual lettering attracts attention.
Symbols and Communication	Letters or words can create an overall pattern. Music employs many different symbols to communicate meaning. Television commercials serve as models for advertising ideas. A symbol can be associated with an advertising slogan. An advertisement or commercial should have wide appeal. Signs for shops are advertisements. A free standing display in three dimensions can advertise a product or announce an event.
THE PUPPET PERFORMANCE **pp: 65-70 Time: 4-6 Weeks	
The Puppet and the Spoken Word	The puppet's action is coordinated with the puppet's dialogue. Puppets react to the dialogue of other puppets. Dialogue may be improvised on stage. Puppets are used in conversation, discussion, reporting, story telling as well as in the performance of a play or skit.
The Puppet Actor	Puppets on stage are actors. Puppets express a variety of feelings, ideas, and moods. Nature of speech combined with dramatic action express the puppet's character. Puppets are used to enliven other areas of the curriculum.
The Puppet Play	Groups of students work on each aspect of the puppet performance. Original scripts, plays, or stories are adapted for the puppet characters. Sound effects and music are part of the performance.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PHOTOGRAPHY **pp: 78-80 Time: 6-8 Weeks	
Creating Original Images	Magic markers create new images on color slides. A slide projector casts the shadow of a cutout design or three-dimensional figure on a screen. Scratching designs on the coated sides of negatives creates new images. A collage made from tissue paper, thread,cellophane,and other bits of paper thin material can be placed in a slide mount and projected.
The Photograph	Photographs communicate ideas and feelings. Photographs reveal the individual's unique and personal way of seeing. Photographs record and comment upon nature,family,friends, school,community,and things.
The Camera Lens	The camera lens focuses on distant and close objects. Selective focus is controlled by changing the aperture (opening) of the lens. Focusing the camera at something close has an effect upon the background. Focusing the camera at something distant has an effect upon the foreground.
The Camera Viewfinder	The viewfinder frames the subject to be photographed. The distance of the viewfinder from the eye changes the field of view.
The Camera Film	Black and white prints communicate a different mood from color prints or color slides.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FILMMAKING **pp: 88-90 Time: 4-6 Weeks The Field of View	Filming is performed from different points of view. Paintings or drawings can be filmed to create a sequential story. The camera can be moved in a continuous,slow,smooth sweep. Using a zoom lens, the camera remains stationary while the field of view changes. Sound can be recorded as it occurs in a natural situation, such as traffic noises or cheers at a ball game.
Animation	Many forms and more varied kinds of motion are possible in animation. The moving image on the screen is an illusion. A succession of photographs of an object in slightly different positions is the basis of an animated film. Still material is animated by shooting two or three frames in one position before the subject is placed in a new position and photographed again. The camera is in a fixed position while the objects are moved between takes. Slow motion effects are achieved by exposing more than three frames before placing the object in a new position. Filming indoors requires photographic lights set on stands. Cartoon figures,magazine cutouts,drawings,puppets, and sculpture can be animated. Live and animated motion can be combined on one film.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
COSTUME DESIGN **pp: 96-98 Time: 2-4 Weeks	
Combinations and the Total Look	Fabrics, colors, patterns, and textures are combined to express individuality. The effect of colors, textures, and patterns can be demonstrated by draping fabrics on the figure. Combining different fabrics and textures affects the total look of a costume.
The Elements of Design	Costumes are designed. Various shapes, colors, patterns, and textures are elements in costume design. Different types of patterns, textures, and colors are appropriate for different occasions and seasons. Size, shape, function, and construction are considered in the design of accessories.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE *pp. 226 - 227	Content: The process of maturing is aided by understanding characters and situations in literature. Personal attitudes and values are clarified through the study of good literature. Responsibility to other members of society is developed through a careful reading of good literature. The author often wishes to present a thesis or statement which is called the theme.
Short Story Novel and Drama *p. 241	Form: Variations in time sequence in plot development, such as, beginning in medias res have an impact. Foreshadowing is a technique to give psychological and artistic emphasis. Characters are revealed through the use of first person narrative.
Poetry *p. 242	The associative values of words enrich poetry. Internal rhyme contributes to the musical quality of poetry. Hyperbole, exaggeration, is a figure of speech which heightens effects in poetry. Symbol, generally a material object used to represent something often immaterial, is frequently used for effect in poetry.
Autobiography *p. 261	The authors of autobiographies have both advantages and disadvantages in approaching their own lives.

*HANDBOOK FOR ENGLISH LANGUAGE ARTS READING AND LITERATURE GRADES 5 - 12

**HANDBOOK FOR ENGLISH LANGUAGE ARTS SPEECH AND COMPOSITION GRADES 5 - 12

***HANDBOOK FOR ENGLISH LANGUAGE ARTS LANGUAGE STRAND GRADES 5 - 12

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Essay *p. 265	The character sketch is a form of essay frequently found in books and in journals.
WRITING	
Words and Expressions **p. 181	Brevity and succinctness can be of value in the clear statement of ideas.
Sentences **p. 181 - 182	Adverbial and adjective clauses are used to present ideas subordinate to the main idea. Variety in sentence beginnings through the use of infinitives and phrases provides smoothness and interest.
Paragraphs **p. 182	Expository paragraphs may be developed through detail and example. The appropriate tone for different types of business letters may be courteous, firm, insistent, and always succinct.
Multi-Paragraph Composition **p. 183	"Fan" letters should reflect honesty of reaction and good taste. Longer compositions may be composed of paragraphs stressing introduction, body, and conclusion.
Research and Library Techniques **p. 184	Articles and books are summarized by statement of principal ideas. The formal outline in topical or sentence form may be used as the basis for speaking or writing activities.

ENGLISH LANGUAGE ARTS - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Forms **p. 184	Forms and applications require accuracy in preparation and care in following directions.
LANGUAGE	
Grammar ***p. 20	The basic sentence patterns may be expanded by modification and coordination. Parallel structure is used when linking words, phrases, and clauses.
Semantics ***p. 89	Words have connotations both positive and negative, a device exploited by commercials and reporting. The omission of information is a technique which may be used for bias.
Vocabulary ***p. 148	Regional variations may alter the pronunciation and meanings of words.
Spelling ***p. 207	The Basic List of Spelling Words contains words appropriate for each grade. Addition of suffixes and prefixes may alter the spelling of the word.
SPEECH AND SPEECH ARTS **p. 52	Informal and formal debating provides a forum for exchange of ideas and opinions.

HEALTH EDUCATION - GRADE 8

(Intermediate - Junior H. S.)

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MENTAL HEALTH *pp. 9-14 Also, see FAMILY LIVING INCLUDING SEX EDUCATION Time: 7 hours	Personality development is influenced by hereditary and environmental factors. Adolescent needs are satisfied in a variety of ways. Adolescence is a period of striving toward emotional and social adjustment.
DRUG AND SUBSTANCE ABUSE *pp. 32-44 Time: 13 hours	Proper drug use is taking a substance for its intended purpose and in the appropriate amount, frequency, strength, and manner prescribed. Drug abuse is the use of any drug to the point where it interferes with an individual's physical, social, and emotional well-being. There are a variety of drugs which are used and abused by individuals. There are a variety of individual and social factors that influence misuse and abuse of drugs. There are a variety of reasons why people do not use, misuse, and abuse drugs. There are ways to cope with social and emotional pressures of life other than through use of drugs. A preventive program involves the cooperative efforts of all segments of the community. Government agencies have specific responsibilities to regulate and control the use of drugs.

* HEALTH EDUCATION IN SECONDARY SCHOOLS

HEALTH EDUCATION - GRADE 8

(Intermediate - Junior H. S.)

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DRUG AND SUBSTANCE ABUSE (continued)	Treatment and rehabilitation programs aim to help drug abusers become drug free and capable of assuming responsible roles in the community.
ALCOHOL *pp. 82-86 Time: 6 hours	Historically, alcohol has been used in a variety of ways and for different purposes. The consumption of alcoholic beverages affects the body in many ways. There is a relationship between consumption of alcoholic beverages and behavior and personality. Alcohol abuse and alcoholism affect the individual, the family, and the community.
SMOKING *pp. 104-112 Time: 6 hours	Smoking is a critical health problem. Smoking has a harmful effect on the lungs and heart. There are social and psychological factors that contribute to the smoking habit.
DISEASE PREVENTION AND CONTROL *pp. 130-141 Time: 10 hours	Communicable diseases are caused by infectious agents transmitted from one person to another either directly or individually. Prevention and control of communicable diseases are related to blocking pathways of infection, improving body resistance, and providing early treatment.

HEALTH EDUCATION - GRADE 8

(Intermediate - Junior H. S.)

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DISEASE PREVENTION AND CONTROL (continued)	Included among the important communicable diseases that continue to be a challenging community problem are venereal diseases. Chronic ailments such as heart disease, cancer, and diabetes are the leading causes of disability and death.
NUTRITION *pp. 176-191 Time: 5 hours	Nutrition affects one's physical growth and development. Nutrition affects physical growth and appearance by its influence on the body. Nutrition affects personality, vigor, and ambition. Good nutrition requires a sufficient quantity of nutrients for proper body functioning. Good nutrition requires a proper balance of nutrients. Good nutrition is promoted by establishing good food habits and good attitudes toward food.
CONSUMER HEALTH *pp. 216-222 Time: 7 hours	Good judgment in the selection and utilization of health services and products enhances health and saves money. Health quackery deprives the consumer of adequate health protection. Advertising may mislead individuals in their selection and use of health information, products, and services. Governmental and professional groups protect the public from fraudulent health practices.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ENVIRONMENTAL AND COMMUNITY HEALTH *pp. 238-249 Time: 7 hours	One's health and well-being is influenced greatly by environment. Air pollution, a serious health problem, is a product of increased population and heavy industrialization. Water pollution, a menace to our health and a threat to the economy, contributes to the ever-growing problem of water shortage. Widespread use of chemicals in combating pests has created additional environmental health hazards. Noise pollution has become an important environmental health problem. Continuous use of radiation or radioactive material presents numerous potential health hazards.
SAFETY AND FIRST AID *pp. 270-274 Time: 11 hours	Potential for accidents exists everywhere in man's environment. Behavior contributing to accidents may be the result of imitation, failure to follow directions, carelessness, or inability to recognize hazards. Individuals should be prepared to act effectively in case of accidents.

MATHEMATICS - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MEASUREMENT *pp: 1-15 Time: 8 days	Approximate nature of measurement; meaning of precision; relative error; significant digits, scientific notation
TRIANGLES AND QUADRILATERALS *pp: 16-59 Time: 15 days	Triangles: classification according to sides, use of protractor, sum of angle measures, classification according to angles, relationships between angles and sides; congruent line segments and congruent angles; congruent triangles; similar triangles; parallel lines; properties of a parallelogram
SQUARE AND CUBIC MEASURE *pp: 60-90 Time: 10 days	Area: parallelogram, triangle, circular region; Volume: rectangular solid, cylindrical solid; metric units of liquid measure
SYSTEMS OF NUMERATION *pp: 91-116 Time: 9 days	Decimal notation; base five; base two; addition in base five; multiplication in base five; addition in base two; multiplication in base two (optional)
THE SET OF INTEGERS *pp: 117-149 Time: 11 days	Integers and the number line; concept of absolute value; operations with integers; addition; subtraction; multiplication; division
THE SET OF RATIONAL NUMBERS *pp: 150-167 Time: 7 days	Negative rational numbers; rational numbers on the number line; order; addition, subtraction, multiplication and division

*MATHEMATICS: GRADE 8, Scope and Sequence, Curriculum Bulletin, 1967-68 Series No. 18a and 18b

MATHEMATICS - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
EQUATIONS AND INEQUALITIES *pp: 168-216 Time: 18 days	Inequality of the form $ax+b>c$; equivalent equations; addition property of equality; use of addition property to solve equations; multiplication property of equality; use of multiplication property to solve equations; verbal problems; use of two properties of equality to solve equations; concept of proportion; use of proportion in problem solving
THE SET OF IRRATIONAL NUMBERS *pp: 217-244 Time: 10 days	Meaning of square root; estimation of principal square root; terminating and repeating decimals; concept of irrational number; approximate square root of a non-perfect square; Pythagorean relationship; irrational numbers on the number line
GRAPHS *pp: 245-269 Time: 10 days	Graph of solution set of an inequality in one variable; meaning of an ordered pair of numbers; location of a position in a plane by means of an ordered number pair; graph of solution set of an equation in two variables; graph of a formula in two variables
SURFACE AREA AND VOLUME *pp: 270-288 Time: 6 days	Characteristics of plane and solid geometric figure; meaning of polyhedron; surface area of prism and pyramid; volume of a pyramid, surface area of right circular cylinder; volume of right circular cone

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
STATISTICS AND PROBABILITY *pp: 289-316 Time: 16 days	Organization of data; frequency distribution; histogram; frequency polygon; mean, mode, and median; percentile rank; meaning of probability; use of numbers to indicate probability; probability ratio; sample space, probability as a per cent

MUSIC - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MUSIC APPRECIATION	Music is approached through the process of active participation by: singing folk and art songs in unison, two and three part songs; musical instrument instruction - recorders, guitars, classroom instruments; attendance at concerts; creative activities.
MAJOR ELECTIVES	
The Chorus - Vocal Techniques	Proper voice production is essential to quality singing. Vocal techniques such as: controlled use of the vocal apparatus, resonant tone quality, correct intonation, clear diction are taught in the vocal class and the chorus. There is a need to understand the tone producing organs, e.g., mouth, lips, larynx, pharynx, tongue and uvula.
THE INSTRUMENTAL PROGRAM	The instrumental program provides the fundamental training on all instruments. Homogeneous instrument training classes are more effective than heterogeneous classes(single instrument class, such as violin only, as opposed to violin, viola, cello and bass violin in the same class).
Band Orchestra Instrumental Class	The orchestra and the band provide the vehicle for the development of ensemble playing, technique development, reading of traditional and contemporary music literature, student conducting and performance.

PHYSICAL EDUCATION - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
INDIVIDUAL, DUAL AND LEISURE TIME SPORTS	
BADMINTON	
Basic Skills	Grip—Forehand and Backhand Player Positions—Center Court, Ready, Footwork Serve—Low Serve, Placement Strokes—Overhead Clear, Forehand and Backhand Drive, Backhand Clear
BICYCLING	
Basic Skills	Names and Functions of Bicycle Parts Riding A Straight Line Mounting and Dismounting Controlled Stop Avoiding Obstacles Road Courtesy Efficient Riding, Ankling
BOWLING	
Basic Skills	Stance--Erect Ball Delivery--Position for Straight Ball, Four Step Approach, Release, Follow Through
GOLF	
Basic Skills	The Grip, Back Swing, Down Swing, Putting, Use of Irons
GYMNASTICS	
Parallel Bars	Forward Roll
Uneven Parallel Bars	Cross Seat Mount, Pull Off Low Bar With Quarter Turn, Crotch Seat

PHYSICAL EDUCATION - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Horizontal Bar	Leg Raise--Straight Knee, Forward Roll to Hang
Side Horse	Flank Vault, Rear Vault, Single Leg Cut Forward-Half Circle
Long Horse Vaulting	Squat Vault, Straddle Vault
Balance Beam	Straight Arm Support Mount, Straight Arm Seat Mount, Crotch Seat Mount, Walk on Beam, Dip Step, Leg Swing, Simple Run, V Seat, Arabesque, Front and Knee Scales, Toe Balance From Knee Scale, Simple Jump Dismount
TUMBLING AND FLOOR EXERCISES	Tip-Up, Handstand With Support, Cartwheel Dual Stunts: Knee to Shoulder Balance, Swan Balance, Foot to Hand Balance, Double Roll, Elephant Walk, Back to Back Roll, Pyramids
Rebound Tumbling (Trampolining)	Knee Drop-Half Twist-Stand, Straddle Jump, Seat Drop, Swivel Hips, Seat-Drop-Half Twist-Stand
Rope Climbing	Climb Half Way--Hands and Feet
SWIMMING	Swimming as a Physical Fitness and Leisure Time Activity Safety Precautions
Beginner Skills	Breathing and Floating, Basic Kicks, Changing Position and Direction, Jumping into Deep Water, Releasing Cramps, Reaching Assists
Optional Activities	Advanced Beginner Skills Based Upon Student Ability Levels Determined by Pretesting
TRACK AND FIELD	
Sprints	Review of Seventh Grade Skills
Relay Racing	Review of Seventh Grade Skills -- Shuttle Relays
High Jump	Western Roll
Hurdles	Low Hurdles--Start and Form

PHYSICAL EDUCATION - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
TEAM SPORTS	
BASEBALL	Fielding--Ground Ball in the Outfield
Basic Skill	
	Pitching (Softball) - Windmill Delivery
	Pitching (Handball) - Side Arm
	Batting--Sacrifice Bunt
	Base Running--Advance for Extra Bases, Steal and Slide
	Defensive Skills--Backing Up Players, Outfield Throw to the Infield, Force Outs, Run Downs, Throws to Bases
BASKETBALL	
Basic Skills	Passing--Baseball, One Hand Side Arm, Cross Chest
	Shots--One Hand Jump, Under Hand Lay-Up Over Front Rim
	Dribbling--Chance Direction, Dribble, Stop and Pass Off
	Defensive Skills--Forward and Backward Shuffle, 3-2 Zone, 2-3 Zone, 1-2-2 Zone
	Offensive Skills--Horseshoe Weave
FIELD HOCKEY	
Basic Skills	Strokes: Dribble, Push Pass, Drive
	Stops: Stick Stop
	Tackles: Straight Forward Tackle
	Bully: Center Bully
	Push-In: Push-In Situations
	Offensive Skills: Positioning, Passing, Shooting
	Defensive Skills: Marking and Clearing
FLAG FOOTBALL	
Basic Skills	Stance: Linemen and Backfield
	Passing: Overhand
	Catching: Above and Below the Waist
	Ball Carrying: Center-Quarterback Exchange, Hand-Off
	Blocking: Brush, Shoulder
	Kicking and Punting
	Defensive Skills: Line and Backfield

PHYSICAL EDUCATION - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SPEEDBALL	
Basic Skills	Pickup--Two Feet, One Foot on Stationary Ball Guarding--Basic Stance
Soccer Skills	Dribbling, Instep Kick, Foot Kick, Foot Trap, Body Trap
Basketball Skills	Chest Pass, Underhand Pass, Catching
Football Skills	Guarding
Position Play	Goal Keeper, Fullback, Halfback, Forward Game Situation Play
VOLLEYBALL	
Serving	Underhand, Open Palm
Passing and Volleying	Flick Pass--Above and Below the Waist Spike, Forward Set Pass and Spike
Rotation	Simple--Basic
Defensive Skills	Blocking
Culminating Activities	Game Play, Intramurals
PHYSICAL FITNESS CONDITIONING AND BODY MECHANICS	
CALISTHENICS	
Isotonic Exercises	
Isometric Exercises	Physical Fitness Testing Should be Conducted Annually.

PHYSICAL EDUCATION - GRADE 8

AREA CONTENT AND TOPIC	SKILLS AND KNOWLEDGE
WEIGHT TRAINING	See Grade Seven for Description of Activities
CIRCUIT TRAINING	
PHYSICAL FITNESS TESTS	
AAHPER Youth Fitness Test	
N.Y.S. Physical Fitness Test	
DANCE	
MODERN DANCE	
Conditioning Techniques	Bent Knee Bounce, Straight Leg Bounce, Prance Preparation
Sitting and Kneeling	Sitting and Kneeling, Lying Techniques
Standing and Locomotor	Positions A, B, C Knee Bends, Walk, Foot Preparation For the Walk, Performance and Creation

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CHEMISTRY	
LIQUID SOLUTIONS *pp: 1-39 Time: 12 periods	
Forming Solutions With Water	Liquids, solids, and gases which dissolve in water form homogeneous solutions. The dissolving substance is called the solute. The substance in which it dissolves is the solvent. Solutions have definite characteristics.
Other Solvents	Other liquids may serve as solvents for substances which will not disolve in water - i.e.,alcohol, oil, acetone.
Factors Affecting Time For Solutes to Dissolve	The rate of dissolving of solutes is affected by size of particles, mixing of solution, and temperature of solvent. The concentration of the solution depends on the temperature of the solvent, the solubility of the solvent, and the quantity of solute added.
Changing the Boiling and Freezing Points of Water	The addition of solute to water lowers the freezing point and elevates the boiling point of water according to the amount of solute added. This concept has application to real situations where changes in boiling and freezing points would be desirable.
Separation of Solute From Solvent	Dissolved solutes may be separated by distillation and evaporation. Liquid solutes are separated by fractional distillation. The kinetic energy theory is useful in explaining techniques for separation.

*SCIENCE - GRADE 8, #20, 68 Series

SCIENCE - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SUSPENSIONS AND EMULSIONS *pp: 40-57 Time: 5 periods	
Characteristics of Suspensions	Substances which do not dissolve in a liquid, remain suspended in the medium. Suspensions can be identified by means of the Tyndall Effect (light bean) and ease of separation. Suspended particles may be filtered and will settle if left undisturbed. They may also be separated from the medium by sedimentation and coagulation.
Special Kinds of Suspensions	An emulsion is a special kind of suspension of two immiscible liquids (oil and water, mayonnaise). A colloid is a special kind of suspension whose particles do not settle (glue, gelatin). Separation of the substances from the media is accomplished by coagulation and centrifugation.
Stabilizing Emulsions and Colloids	Mechanical blending, emulsifying agents (soap, pectin), and gel formation help to keep the parts in suspension.
ACIDS, BASES AND NEUTRALIZATION	
Identifying Acids and Bases	Acids and bases are special groups of chemical substances which can be identified by their special properties - changing color with indicators, reaction with metals. Many common acids and bases are used in the home - acetic acid, milk of magnesia.
Neutralization	In neutralization, an acid will combine with a base to form a salt and water. Neutral solutions do not change the color of the indicator. Neutralization procedures are useful in determining the relative concentration of the bases and acids.

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SCIENCE - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PHYSICS	
ENERGY *pp: 100-114 Time: 5 periods	
Forms of Energy	Streams, wind, and moving water have mechanical energy. Other forms of energy are chemical, electrical, atomic, heat, light, and sound. Various devices are utilized to demonstrate forms of energy. Energy may be changed from one form into another called conversions. Energy can neither be created or destroyed, only changed from one form into another. Devices which facilitate conversions are analyzed for the changes of energy forms involved.
FORCE AND WORK *pp: 115-132 Time: 6 periods	
Defining the Terms "Force and Work"	Force is defined as a push or pull on an object, while work is defined as a force which causes an object to move.
Measuring Force and Work	The stretch of a spring or the use of a balance may be used to measure force. Work is calculated by multiplying the force by the distance moved. Laboratory simulation of force and work problems help us to measure force and work and to find ways of reducing force necessary to do work. Reducing friction and using devices with a mechanical advantage help us to do work with less force.

SCIENCE - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MACHINES *pp: 133-151 Time: 6 periods	
Using Mechanical Advantage of Machines To Do Work	Devices such as the lever, pulley, and inclined plane are machines which multiply force, making work easier. Mechanical advantage indicates the number of times a machine multiplies the effort force.
Measuring Mechanical Advantage	A knowledge and understanding of such terms as fulcrum, effort arm, resistance arm, and moments of force are essential to making calculations concerning mechanical advantage. Machines providing a mechanical advantage multiply the force necessary to do work, but decrease the distance (height) the object moves.
GRAVITY, DENSITY AND SPECIFIC GRAVITY *pp: 152-178 Time: 10 periods	
GRAVITY	
Falling Objects	Objects fall toward the center of the Earth. The weight of an object is related to the force of gravity acting on that object. Gravitational attraction is proportional to the mass of an object.

SCIENCE - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DENSITY	
Comparing Weight of Different Materials	Density is a ratio of the weight of a substance to its volume. Density is a specific property of a substance and always remains the same. This property helps us identify the substance. Water has a density of 1 gm/cm^3. Substances with a density greater than 1 will sink. Substances with a density less than 1 will float.
Floating and Sinking	Applying the concepts of density to Archimedes' Principle, we can determine that an object will sink when its weight is greater than the weight of an equal volume of water. The object will float if its weight is less than the weight of an equal volume of water. The loss of weight of a sinking object is equal to the weight of the displaced water.
BIOLOGY	
DIGESTION AND ABSORPTION *pp: 190-222 Time: 12 periods	
Digestion of Food	The digestive system is a tube through which food is moved in order to break up and assimilate useful nutrients. Different parts of the digestive system are specialized to perform different operations of the digestive and absorption processes.

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SCIENCE - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Absorption of Food	Food must be made simpler (broken down) and changed (made soluble) before the nutrients may pass through the walls of the small intestine. Enzymes and digestive juices aid in the breakdown of food. The walls of the intestinal tract contain small structures called villi which increase the surface area for absorption and selectively allow molecular size nutrients to pass through into the blood.
CIRCULATION AND RESPIRATION *pp: 223-249 Time: 8 periods	
Circulation of Blood	The circulatory system in higher forms consists of a closed system of blood vessels (arteries, veins, and capillaries), the heart, and blood. The circulatory system is differentiated to perform different functions. The functions are concerned with transport of dissolved nutrients, removal of wastes, oxygen, and CO_2 exchange and defense against foreign organisms. The respiratory system and circulatory systems work together to provide oxygen to the cells of the body and remove oxidation wastes from the body. Specialized structures in the respiratory system facilitate the exchange of gases.
EXCRETION *pp: 250-257 Time: 5 periods	
Removal of Wastes	The removal of the products of oxidation is a function of the skin and kidneys. The skin and kidney also regulate body temperature by means of removal of heat.

SCIENCE - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
EARTH SCIENCE	
THE ATMOSPHERE *pp: 288-334 Time: 20 periods	
Composition of Air	Air is a mixture of gases, including oxygen, nitrogen, and carbon dioxide. Air also contains water, vapor, dust, and pollutants which affect the quality of air. The atmosphere is divided into several sections of varying height. Each part has definite characteristics associated with that region.
Heating the Air Near the Earth	Radiant energy from the sun is absorbed by the earth and changed to heat energy. The air near the surface is heated by conduction and convection. Warm air is lighter and is pushed up by cooler, denser air. The movement of air gives rise to winds. Differential heating of the surface of the earth, water, and light and dark areas produces convection currents or winds.
Air Pressure and Winds	Dry cool air produces regions of high pressure. Warm moist air develops areas of low pressure. Air moves from regions of high to low pressure at speeds related to the differences in pressure.
Water in the Atmosphere	Water evaporates into the atmosphere from many sources. The percentage of moisture in the air compared to what it can hold is called relative humidity. Calculations of dew point and humidity are important functions of weather predictions. In the presence of dust particles, moisture condenses as clouds when the air is cooled.

SCIENCE - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WEATHER *pp: 335-367 Time: 12 periods	
Factors Affecting Weather	The factors which cause changes in weather are temperature, humidity, precipitation, winds, air pressure, and sky conditions (clouds). A weather station model of symbols is a convenient method of showing weather factors at a particular location. Weather factors are measured with a variety of instruments - windvane and anemometer, psychrometer, wind balloons, and barometer.
Changes in the Weather	Air masses are large areas of air with uniform temperature and humidity. Movement of air masses transfer the weather characteristics to the surface over which they are passing. The interaction of the fronts of the air masses effects a change in the weather.
Weather Station Models	Weather maps show the weather at many locations at the same time by means of station models. An understanding and interpretation of the weather symbols provide information about future weather conditions for any area. Meterology is the study of weather and the construction of weather maps to forcast the weather.

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SOCIAL STUDIES - GRADE 8

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
URBAN AMERICA IN THE 20TH CENTURY Time: 12 weeks	
The Rise of the Cities	Railroad, automobile travel, and truck transportation had a great impact on urbanization. Rapid industrialization created mass markets.
The Immigrant Experience	Various economic and social factors in the United States and Europe caused unrestricted immigration in the late 19th and early 20th Centuries. Immigration was restricted from 1920's to the present.
The Culture of a Dynamic Nation	In the 20th Century there have been many social changes in society, e.g., The Roaring Twenties, The Rebellious Sixties. Trends in literature, music, arts, mass media, and recreation reflect modern life.
The Women's Rights Movement	The women's rights movement in the 19th Century was marked by the struggle for the right to vote, among other reforms. The women's rights movement in the 1970's is marked by the struggle for the Equal Rights Amendment, among other reforms.
The Impact of Economic Change	Economic change in the 20th Century has been marked by the Boom of the Twenties and the Bust of the Thirties. Economic growth and relative prosperity has characterized economic change since 1945.
The Struggle for Racial Equality	An important event in the early years of the Civil Rights Struggle was the formation of the NAACP. Major events and leaders in the Civil Rights Movement since 1945 include the Warren Decision of 1954, the Freedom Rides, the Voter Registration Drives, the Montgomery Bus Boycott, the Civil Rights Acts of the 1960's; Martin L. King, Jr., Roy Wilkins, and Malcolm X.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
The Challenge of World Leadership	The United States emerged from the Spanish-American War and World War I as a world power. The United States emerged from World War II as a dominant world power. The United States has exercised a world leadership role since 1945, e.g., the Cold War, Korean War, and the Vietman War.
CASE STUDY OF NEW YORK CITY METROPOLITAN AREA *pp. 4-12 Time: 8 weeks	
The New York City Metropolitan Area as Part of a Megalopolis	The continuous pattern of urban communities in the formation of the eastern seaboard is a megalopolis. There is a flow of goods and services in the eastern seaboard megalopolis. Many major industrial centers are located in this megalopolis. Megalopolis is characterized by cultural diversity. This megalopolis faces many ecological, social, and economic problems such as water and air pollution, racial tensions, aging, housing, stock, and traffic. The New York Metropolitan Area is made up of many cities, towns, and villages in the tri-state region (New York, New Jersey, Connecticut).
The Growth and Development of the New York Metropolitan Area	New York has been an important seaport since the Colonial Era.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	The development of the city was affected by the industrial Revolution, Civil War and immigration. Racial and ethnic minorities have made economic, political, social, and cultural contributions to the development of the city.
Governments in the Metropolitan Area	City, county, and town governments function in the Metropolitan area. There is a problem of overlapping functions of local governments. Expansion of the Metropolitan area has created serious fiscal problems.
CITIZENSHIP IN ACTION Time: 18-20 weeks	Note: Curriculum publication in preparation.
Youth and Government (Time: 5 weeks)	All societies need government to provide and enforce laws. The United States Constitution provides basic political rights such as freedom of speech, press, assembly. Citizens have responsibilities as well as rights such as obedience to law, participation in community affairs, voting, jury service. The national government and state governments are based on democratic principles such as protection of civil liberties, representative government, checks and balances, limited powers.
Youth and Politics (Time: 5 weeks)	Competition among political parties are essential in a democracy in order to give citizens choices among candidates. The two-party system creates a broad range of political opinion within each major party. The two-party system in the United States developed from the origins of the Federalist and Anti-Federalists factions.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Some democratic nations have multi-party systems. Political campaigns afford opportunities for youths to participate.
Youth and The Law (Time: 5 weeks)	Laws are made by representatives of the people in local, state, and federal governments and through legal precedents. Civil law covers disputes between individuals; criminal law covers conflicts between individuals and society. Rights in court procedures are protected in the United States' and State Constitutions. Youthful offenders are treated separately in the criminal justice system. The criminal justice system faces many problems such as back-log of cases, plea bargaining, rising crime rate, crowded prisons.
Consumer Education (Time: 3 weeks)	Consumer demand is a vital element in the United States market economy; the consumer is "king." Teenagers are important consumers in the economy. Teenagers need consumer skills such as budgeting, comparative shopping, analysis of advertising techniques, understanding of credit buying.
Citizenship in Our Urban Society (Time: 2 weeks)	Residents in large cities and government and non-governmental bureaucracies often interact. Knowledge and skills related to the world of work are important to teenagers. New York City residents deal with bureaucracies relative to government and non-governmental agencies, business, and recreation. Citizens bear ethical responsibility for their actions and behavior.

SCOPE AND SEQUENCE

GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING ***pp: 104-110 Time: 6-9 Weeks General Principles	Paintings portray a variety of thoughts, moods, and imagery evoked by real and imaginary experiences. Painting is a means of personal expression and communication. Painting utilizes various qualities of color and design. Painting experience leads to an understanding of fine art. Landscape, portrait, still life, scenes of daily life, abstractions, and imaginary scenes are subjects for painting.
Basic Principles	Design elements are related to all subjects for painting. Complex shapes are simplified. Important details are emphasized. Colors are combined on a trial sheet, then selected.
The Portrait	Character and personality are more important than details of features. Particular features are emphasized for greater expressiveness. Color and texture contribute to expressing character and individuality.
The Landscape	The environment is a resource for creative expression. Color and design re-create the visual and emotional impact of a scene. Pattern and perspective are important elements in depicting the atmosphere of a scene. Points of view may vary from ground level, the top of a building, close-up, or far away. Principal elements to be included in the painting are blocked in with areas of color.

***ART Grades 7,8,9,10

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PAINTING (Cont'd)	
The Imaginative Scene	Day-dreaming and flights of fancy serve as stimuli for personal expression. Color and design are particularly important to this kind of painting. Color and perspective suggest space and distance.
The Mood Painting	A close relationship exists between color and feeling in emotional expression. It is important to identify the prevailing feeling or emotion. Different color combinations produce lively or subdued effects. Individual colors have psychological associations.
THEATER DESIGN ***pp: 111-114 Time: 4-6 Weeks	
General Principles	Color and design play important parts in relation to school theatrical productions, club entertainments and assemblies. The psychological use of color in stage settings, costumes, and lighting lends itself to a wide range of creativity.
Colored Light	Colored light has an effect on pigments and fabrics. Color and lights have an effect on how spatial relationships are perceived. Color and light may create or reinforce a mood. Light projected through colored gelatins can be mixed to produce a variety of colors.
Theatrical Costumes	Color, texture, and design are important elements in costuming. Color can be used to characterize an actor and give him proper emphasis. Silhouette is an important factor in the design of an effective costume.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LETTERING ***pp: 115-117 Time: 2-3 Weeks	Lettering is appropriate to its purpose. Simple,clear,well-designed lettering is planned for school, social,and business usage. Labels,signs, and texts are subjects for lettering. Hieroglyphics,cuneiform,Roman,and manuscript alphabets have contributed to present day letter forms. Typography is an important part of the art of the book. Variations of proportions and their space arrangements are important elements in the design qualities and legibility of letters.
ADVERTISING ARTS ***pp: 119-123 Time:6-9 Weeks	
Forms,Media and Processes	Posters,signs,direct mail,publication,newspapers,television, and displays are forms of advertising. Advertising arts employ many different media as well as mixed media. The fine arts influence contemporary advertising design. Silk-screen,lithography,and letter press are processes used in advertising.
The Cover Design	Color and design contribute to the attractiveness of a book or folder. Lettering is an integral part of a cover design. The content of a book or folder is related to the color and design of its cover.
The Poster	Color and design possess persuasive and dramatic power. The psychological aspects of color and design are utilized for more effective communication. Simplicity of design is an important factor in the effectiveness of conveying a message. Simple and functional lettering is used in poster design.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
The Poster (cont'd)	Subject matter is handled in terms of shapes, colors, and symbolic designs, rather than detailed representation.
The Exhibition	The organization of a display contributes to its effectiveness. An exhibition of art is selective in content. An informative text adds to the effectiveness of an exhibition. Exhibitions may be organized in a time sequence, or organized about a theme. Captions are an effective device for communicating meaning.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
INTERIOR DESIGN ***pp: 133-136 Time:4-6 Weeks	
Physical and Esthetic Essentials	A home meets the needs of all its members. Color and design relationships achieve effects of space and unity.
Color Scheme	Color serves as a means of personal expression. Color is related to the size and to the function of a room. Design and color elements create a pleasing atmosphere. Trial combinations of colors,textures,and patterns are made for study. Color schemes can be warm and cozy,or light and cool.
Window Treatment	The treatment of windows affects the appearance of a room. The proportion of wall areas to window areas determines the design problem. The height and width of a wall can be emphasized or minimized by the window treatment. Draperies of different shapes have different effects on the wall area. Patterned and plain surfaces create a variety of effects.
Model Room Construction	Paper and cardboard can be cut and folded to represent architectural features,such as windows,doors,and walls. Paper and cardboard can be cut and folded to represent important furniture shapes. Trial arrangements are made to establish interior design. Color accents are added to the design at the final stage.

ENGLISH LANGUAGE ARTS - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LITERATURE *p. 230	Content Family and social traditions provide continuity but must be reexamined in the light of new information. Although the individual is a member of society, individuals cannot abrogate responsibilities for their own ethical judgments and actions.
Short Story Novel Drama *p. 241	Form The plot may not necessarily develop according to a regular pattern but may shift back and forth. The plot of a tragedy in drama, and in story and novel as well, may follow the pattern of: rising action, climax, falling action, resolution, denouement. Character development may be evaluated by standards of credibility and consistency. Settings may be single or multiple and shift from one place to another.
Poetry *p. 242	Irony, is the figure of speech which expresses a meaning opposite to the intended meaning. A line of poetry may be divided into measures called feet with a regular pattern of stressed and unstressed beats. Allegory is form where abstract or spiritual meaning is represented through concrete forms. (also used in prose)

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*HANDBOOK FOR ENGLISH LANGUAGE ARTS READING AND LITERATURE GRADES 5 - 12

**HANDBOOK FOR ENGLISH LANGUAGE ARTS LANGUAGE STRAND GRADES 5 - 12

***HANDBOOK FOR ENGLISH LANGUAGE ARTS SPEECH AND COMPOSITION GRADES 5 - 12

ENGLISH LANGUAGE ARTS - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Biography and Essay *p. 244	The biography and the essay may be used to present the author's point of view.
WRITING **p. 186	Details in the descriptive paragraph may be arranged according to spatial order. Expository paragraphs may be developed through the use of comparisons and contrasts.
Letters **p. 186	Letters of application should contain relevant information and appropriate tone.
Multi-Paragraph Composition **p. 187	Dialogue, appropriately punctuated, lends reality to narrative writing.
**p. 202	Papers of argumentation and persuasion support opinion in the evidence: facts, reasons, quotes from authority, statistics.
Journalism **p. 187	The news article contains a lead sentence with the 5 W's and paragraphs of descending order of importance. The editorial is a statement of opinion. The human interest story is an incident usually of local news with emotional or humorous appeal.
LANGUAGE Grammar ***p. 185	Verbs may be formed in active and passive voice. The relative pronoun and the conjunction are used in subordination and coordination.
***p. 21	Appositives and other parenthetical elements provide additional information and are set off by commas.

ENGLISH LANGUAGE ARTS - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Semantics ***p. 93	Slang consists primarily of figurative expressions which may have transient popularity or become part of the language.
Vocabulary ***p. 176	Science, the arts, and industry have contributed many words to the language.
Spelling	*The Basic Spelling List* has words appropriate for the grade.
SPEECH AND SPEECH ARTS **p. 56	The formal speech to give information report or opinion may involve the use of notes.

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MATHEMATICS - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SYMBOLS IN MATHEMATICS	
Time: 5 days	
*pp: 1-4	Symbols in mathematics
*pp: 4-7	Order of operations
**pp: 1-2	Sets
*pp: 48-50	The letter as a variable
RATIONAL NUMBERS: OPERATIONS AND PROPERTIES	
Time: 13 days	
*pp: 9-14,16,61-64,179-180	Addition of signed numbers
*pp: 14-16	Properties of addition
*pp: 66-67,70	Additive identity and additive inverse
*pp: 29-38	Subtraction of signed numbers
*pp: 16-21	Multiplication of signed numbers
*pp: 25-29,63-64,65,66	Distributive property of multiplication over addition and subtraction
*pp: 21-25,62-65	Properties of multiplication
*pp: 66-70	Multiplicative identity and multiplicative inverse
*pp: 39-47,72-73	Division of signed numbers
* Review	The four operations with signed numbers
LINEAR EQUATIONS IN ONE VARIABLE	
Time: 11 days	
*pp: 7-8,57-60	Verbal expressions and mathematical symbolism
*pp: 76-77	Equations
*pp: 122-124	Formulas
*pp: 73-79	Using distributive properties
*pp: 79-81	Verbal problems

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** ADDENDUM TO MATHEMATICS 9TH Year Bulletin

MATHEMATICS - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
POLYNOMIALS	
Time: 13 days	
*pp: 51-54, 96	Coefficients, factors and exponents
* 92-96	Polynomials
* 50-51	Formulas as open sentences
* 54-57, 96	Evaluation
* 96-97	Addition of monomials
* 97-99	Addition of polynomials
* 103-113	Subtraction of polynomials
* 99-101, 107	Multiplication of monomials
* 101-103, 107,114	Multiplication of polynomials: polynomial by a monomial, binomial by a binomial, simplifying members of equation
* 81-83	Verbal problems:
* 85-86	Perimeter
EQUATIONS AND INEQUALITIES	
Time: 11 days	
*pp: 115-117	Equations
* 117-119, 120-121, 87-90	Verbal problems: uniform motion, "overtake", "roundtrip", various kinds of uniform motion
* 124-125,125-128,129,133, 131-133,132-134	Inequalities
DIVISION OF POLYNOMIALS	
Time: 5 days	
*pp: 175-176,176-177	Division of monomials
* 177-179	Division of polynomials: polynomial by a monomial
* 179-185	Division of polynomials: polynomial by a binomial
* 183-185	Division of polynomials: polynomial by a binomial (with a remainder)

MATHEMATICS - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SYSTEMS OF EQUATIONS AND GRAPHS	
Time: 18 days	
*pp: 135-139	Linear equations in two variables
* 139-146	The coordinate plane
* 146-151	Graphing a linear equation in two variables
** 13-17	Slope and Y-Intercept
* 156-158	Graphical solution of a system of two linear equations in two variables
* 158-163	Systems of two linear equations
* 164-172	Algebraic solution of a system of equations
* 166-168	Verbal problems: number problems using 2 variables and "business" problems requiring 2 variables
* 90-91, 83-85	Verbal problems: "dry" mixture, investment, digit
* 152-156	Graphing a linear inequality
* 172-174	Graphing a system of linear inequalities
FACTORING AND QUADRATIC EQUATIONS	
Time: 12 days	
*pp: 186-190	Factoring polynomials
* 197-198	Multiplying two binomials by inspection
* 191-195	Special products of binomials
* 195-197	Factoring polynomials: difference of two squares; $ax^2 + bx + c$, $a = 1$; $a > 1$;
* 203-208	Quadratic equations
* 209-210	Verbal problems: involve the solution of quadratic equations; area problems
FRACTIONS	
Time: 11 days	
*pp: 211-217	Simplifying fractions: with monomical numerators and denominators through factoring
* 216-217	Simplifying fractions: polynomial numerators and/or denominators through factoring
*217-220	Multiplying fractions
*220-222	Dividing fractions
*222-223	Combining (adding, subtracting) fractions, like monomial denominators;

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MATHEMATICS - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FRACTIONS CON'T	
Time: 11 days	
*pp: 224-229, 228-230	Combining fractions, monomial numerators and unlike monomial denominators; polynomial numerators and unlike monomial denominators
* 230-233	Solving fractional-type equations, monomial numerators and monomial denominators
* 233	Solving fractional type equations, binomial numerators and monomial denominators
* 233-234, 233	Verbal problems, work problems; number problems involving equations with fractions
THE REAL NUMBERS	
Time: 9 days	
*pp: 235-240	Rational numbers
* 240-243	The real numbers, irrational numbers and associate them with points on the number line
** 3, 4	Significant digits
* 243-247	Meaning of square root
* 247-252	Approximation of square root
* 253-257	The Pythagorean theorem
* 258-262	Simplifying radicals
** 8-10	Multiplication and division of radicals
** 7	Combining radicals
RATIO, PROPORTION AND INDIRECT MEASUREMENT	
Time: 10 days	
*pp: 271-272, 274-276	Ratio proportion
* 273-275, 276-277	Ratio proportion, problems using algebraic methods
* 282-284	Similar triangles
* 284-285	Similar triangles, indirect measurement
* 286-289, 290-293	Tangent ratio
* 294-295	Sine ratio
* 295-298	Cosine ratio
* 298	Trignometric problems

MATHEMATICS -- GRADE 9 PRE-ALGEBRA

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ARITHMETIC	
Time: 25 days	
	Preparing multiplication table
	Role of zero, of 1; commutatively, distributivity; patterns
	Factors; divisibility; even and odd numbers
*pp: 51	Multiplication and division as related operation
	Divisibility rules
*pp: 67-68	Reciprocal
	Primes and composites
	Intersection of sets; Venn Diagrams
	Factoring a counting number
*pp: 10-16, 61-66	Using properties for addition of rational numbers to reinforce computation skills through the understanding of patterns such as: $8\frac{1}{3} + \square = 8\frac{1}{3}$ $2.5 + 0 = \square$ $\square + \Delta = \square$
*pp: 271-275	Ratio; Ratio factor
*pp: 275-277	Proportion
	Percent: percent form, fraction, decimal form
	Finding what percent one number is of another (arithmetic solution)
	Finding a percent of a number (arithmetic solution)
NUMBERS	
Time: 5 days	
*pp: 1-4	Numbers and numerals
	Other names for numbers
*pp: 9-10	Set of integers: meaning, applications; representation on number line, order
*pp: 1-4	Use numbers in decimal form: other names for numbers
*pp: 235-236	Set of rational numbers: meaning many names for a rational number
	Representation on number line, order
	Multiplication of fractional numbers

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**ADDENDUM: GENERAL MATHEMATICS: 9TH YEAR - Curriculum Bulletin 1964-65 Series No.16 614

MATHEMATICS - GRADE 9 PRE-ALGEBRA

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
NUMBERS CON'T	Generalization Property of 1 in multiplication Greatest common factor Equivalent fractions Multiples Addition of two fractional numbers Addition in the set of rational numbers
OPERATIONS Time: 24 days *pp: 4-7	Order of operations Grouping symbols Using properties of addition of whole numbers to reinforce computation skills through the understanding of patterns such as: $8 + 19 = \square + 8$ $8 + \square = \square + 8$ $\square + \Delta = \Delta + \square$ Addition and subtraction as related operations Addition of two positive integers; two negative integers Addition of a positive and a negative integer properties for addition of integers
*pp: 4-7	Order of operations
*pp: 25-28, 67-68	Using properties for multiplication of non-negative rational numbers to reinforce skills through the understanding of patterns such as: $9 \times 8 = \square \times 9$ $9 \times 2/3 = \Delta \times 9$ $\square \times \Delta = \Delta \times \square$
*pp: 16-18, 19,20	Multiplication of two positive integers; of a positive integer and a negative integer Multiplication of two positive rational numbers; of a positive rational number and a negative rational number Multiplication of two negative integers

MATHEMATICS - GRADE 9 PRE-ALGEBRA

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
OPERATIONS CON'T	
*pp: 18,19,20,21-28, 61-68	Multiplication of two negative rational numbers Properties for multiplication of rational numbers Division: property of 1; multiplication of dividend and divisor by same number Use whole numbers; number in decimal form, fractional numbers
*pp: 39-41	Division of rational numbers Subtraction with whole numbers; with numbers in decimal form; with fractional numbers
*pp: 29-38	Subtraction of integers Subtraction of rational numbers
SENTENCES	
Time: 13 days	
*pp: 48-50	Open sentences and statements
*pp: 16-18, 19-21	Solution of equations $x \pm a = b$, $ax = b$
**pp: 16-27	Solution of equations $x \pm a = b$ use set of rational numbers $ax = b$ use set of positive rational numbers $\frac{x}{a} = b$ use set of positive rational numbers
**pp: 26-30	Solution of equations $\frac{ax}{b} = c$ $\frac{x}{a} \pm b = c$ $ax \pm b = c$
*pp: 76-79 **pp: 30-33	Solution of equations $ax \pm bx = c$ using the distributive property of multiplication over addition
*pp: 128-130	Solution of inequality $x + a > b$ $x + a < b$ Solution of inequality $x + a < b$ $x + a > b$
*pp: 131	Solution of inequality $ax > b, a > o$ $ax < b$

MATHEMATICS - GRADE 9 PRE-ALGEBRA

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SENTENCES CON'T	
	Solution of inequality $\frac{x}{a} > b$ $a > 0$ $\frac{x}{a} < b$
PROBLEMS Time: 12 days	
*pp: 50-51	Verbal problems (equations $ax = b$; $x \pm a = b$) Evaluating formulas - involving decimals Word problems
**pp: 22-25	Verbal problems (equations of type $ax = b$, $\frac{x}{a} = b$, $x \pm a = b$)
*pp: 79-91	Verbal problems
**pp: 33-41	Use references for problem selection Use verbal problems throughout the remainder of the course
GEOMETRY Time: 13 days	
*pp: 139-145	Graphing a set of numbers on a number line (order) Graphing a set of points in a number line
**pp: 68-82	Plotting vertices of regular polygons in a number plane (also animal shapes; interesting figures); by counting unit squares, compute areas Graphing of equations of form $y = kx$ such as $y = 2x$
*pp: 124-126	Graphing inequalities $a \leq x$, $b \geq k$
*pp: 125-128	Graphing inequalities $a \leq x$, $\geq c$ Angle relationship: angles in triangle; complementary angles, supplementary angles Problems involving ratio Graphing $y \leq mx$ such as $y \leq 2x$ Graphing $6 \geq mx$ such as $y \geq 3x$

MATHEMATICS - GRADE 9 PRE-ALGEBRA

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
ALGEBRA	
Time: 23 days	
*pp: 7,8,57-60 **pp: 10-16,22-24	Translating word phrases and sentences into algebraic expression
*pp: 54-57	Evaluating word phrases and algebraic expressions
*pp: 135-136	Ordered pairs of numbers
	Writing and evaluating simple formulas such as perimeter of regular polygons, the number of nickels, n in d dollars
*pp: 50-51	Using formulas to find perimeters of regular polygons, such as $p = 3s$, $p = 4s$, etc.
**pp: 19-21	Solving equations of form $ax = b$
*pp: 51-54	Exponents
	Compare graphs of $y = 2x$ and $y = x^2$
*pp: 50-51,54-60	Evaluating formulas; include formulas for computing areas; distance formulas such as $d = rt$, $d = 16t^2$
	Solving for y in the equation $y = mx + b$ given values for m, x,b
*pp: 146-148	Graphing equations of the type $y = mx + b$, such as $y = 2x + 5$
	Compare with other graphs
**pp: 16-18	Solution of equations of type $x \pm a = b$
	Addition and subtraction as related operations
*pp: 7,8,57-60 **pp: 10-16	Translating word phrases and evaluating algebraic expressions
**pp: 16-18 22-24	Solution of equations of type $x \pm a = b$ using the set of rational numbers
*pp: 50-51	Evaluating formulas involving fractional numbers
	Solving for y in the equation $y = mx + b$ given values for m, x, b Use fractional numbers and number in decimal form
**pp: 16-22	Solution of equations $ax = b$; $\frac{x}{a} = b$ set of rational numbers
	Solving all percent problems algebraically ($ax = b$)

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MUSIC - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
MUSIC APPRECIATION *p. 73	
Listening	Music is heard in the concert hall, television, radio, and in the school.
Singing	Choral music is arranged in three and four part singing. The repetoire of songs are drawn from traditional, art songs, popular and folk rock songs, and national songs.
Reading Music	Some options for the general music program are: guitar class, recorder, history of jazz, folk music, electronic music.
MAJOR ELECTIVES	
Vocal	Vocal classes are programmed as vocal training class, mixed class, mixed chorus, boys chorus, girls chorus.
The Chorus Choral Techniques	The vocal techniques include: blending, articulation, phrasing and balance. The repetoire is drawn from current materials, such as folk rock and theatre music; traditional settings and concert material.
MAJOR ELECTIVE	
Instrumental Instrumental Class	Instrument training begins in the instrumental music class (homogeneous instrument classes)
Band Orchestra	Bands and Orchestras are culminating musical activities (concerts, assemblies). They can play prepared arrangements designed for their abilities and drawn from traditional and modern material. The musical techniques should include: blending, balance, phrasing, articulation and intonation.

*COURSE DESCRIPTIONS
INTERMEDIATE AND SECONDARY SCHOOLS

PHYSICAL EDUCATION - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
INDIVIDUAL, DUAL AND LEISURE TIME SPORTS	
SWIMMING	
Advanced Beginner Skills	Elementary Back Stroke, American Crawl, Diving and Underwater Swimming, Use of Life Jacket and Floatation Devices, Elementary Forms of Life Saving
Optional Activities	Intermediate Swimming Skills and Life Saving Techniques Based Upon Ability Levels Determined By Pretesting
TENNIS	Review of Basic Skills Taught in Grade Seven Emphasis Upon Achieving a Higher Level of Performance Through Drill and Game Play
TRACK AND FIELD	
Sprints	Start—Outdoor With Blocks
Distance Running	Body Angle, Arm Swing, Stride
Relay Racing	Baton Pass--Non-Visual Shuttle Relays
Long Jump	Running Long Jump
Triple Jump	Step and Leap, Running Triple Jump
High Jump	Review Scissors and Western Roll Emphasis Upon Achieving Higher Level of Performance
Hurdles	Low Hurdles--Review of Eighth Grade Skills
Shot Put	Stance, Pivot, Glide, Follow Through

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PHYSICAL EDUCATION - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
GYMNASTICS	
Parallel Bars	Shoulder Stand, One Leg Cut Mount, Forward Roll to Straddle, L Support, Hip Roll, Inside Swing Turn, Outside Swing Turn
Uneven Parallel Bars	Single Leg Flank Vault, Under Swing on Low Bar, Leg Circles, Counter Swing, Stride Leg Support-Low Bar, Front Somersault-Low Bar, Back Hip Circle
Horizontal Bar	Hip Swing--Pullover, Single Knee Mount, Forward Knee Circle to Hang, Underswing Dismount
Side Horse	Thief Vault, Single Leg Cut Forward--Full Circle, Leg Cut With Travel to Croup or Neck, Vault Dismount from Hang
Long Horse Vaulting	Stoop Vault
TUMBLING AND FLOOR EXERCISES	L Support, Backward Roll With Snap Down, Head Stand, Forward and Backward Roll With Half Twist
Rebound Tumbling (Trampolining)	Mount and Dismount, Front Bounce, Hands and Knees to Front Drop, Back Bounce, Back Drop
Rope Climbing	Climb to Top--Hands and Feet
HANDBALL	Fist or Punch and Full Arm Underhand Stroke, Straight Arm Underhand Stroke, Underhand Serve, Chop and Spin Serves, High Lob Serve, Low Drive Serve, Volley Off the Wall, Game Strategy
Paddleball	Power Grip, Backhand Loop Swing, Forehand Swing, Opposite Hand, Volley From Face or Chest, Half Volley, Short Hop Volley, Over-head Return, Over-head Drive, Over-head Lob, Over-head Drop, Over-head Smash, Mixing the Serve, Game Strategy

PHYSICAL EDUCATION - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
TEAM SPORTS	
BASKETBALL	
Basic Skills	Passing--Hook, Two Hand Overhead Shots--Layup From Left Side With Left Hand, Hook Defensive Skills--Boxing Out Offensive Skills--Faking, Breaking Up a Zone Defense, Figure Eight Weave
GYM HOCKEY	
Basic Skills	Stick Handling: Grip and Stance, Dribbling, Drive Passing and Fielding Game Skills: Goalkeeper, Offensive and Defensive Players
SOCCER	
Basic Skills	Dribbling--Inside, Outside of Foot Heading--Sideways Tackling--Two Leg Tackle, Charging, Blocking Feinting--Foot Feint Kicking--Outside of Foot Flick, Heel Kick, Short Pass Toe Kick Trapping--Inside, Outside of Foot Goal Keeping--Position Play, Punt After Catch, Throw Out Game Situation Play
VOLLEYBALL	
Serving	Underhand--Closed Fist
Passing and Volleying	Chest Pass--Two Hand Forward Set Pass Forearm Bump Dig Pass--One Hand

PHYSICAL EDUCATION - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
TEAM SPORTS	
Defensive Skills	Serve Defense
Culminating Activities	Game Play, Intramurals
COMBATIVES	
FENCING	
Basic Positions	Stance--On Guard Position Footwork--Advance, Retreat, Lunge Engagement--The Four, the Six, the Seven, the Eight, Change of Engagement Parries--Direct, Semi-Circular, Circular --Soft Hit, Straight Thrust, Disengage, Coupe, Compound
Attack Skills	The Feint, the Beat, the Press, the Glide, Derobment, Compound Attacks
Culminating Activities	Intrasquad and Intramural Torunaments
SELF DEFENSE	Learn to Defend and Protect Against Assault Safety Precautions in the Home and on the Street Attain a High Level of Physical Fitness Through Intensive Training and Practice
Defense Techniques	Grabbing the Hair, Front Neck Choke, Pushed From the Front, Collar Choke, Bear Hug, Two Hand Wrist Grip, One Hand Wrist Grip, Cross Wrist Grip, Handshake and Pull
KARATE	
Offensive Skills	High, Middle and Low Punches, Two Fisted Punch, 1-1 Punch, Side Punch, Spear Hand Strike, Knife Hand: Outside In, Inside Out

PHYSICAL EDUCATION - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
COMBATIVES	
Defensive Skills	Rising Block, Middle Inside-Out Block, Middle Outside-In Block, Low Block, Double Middle Block
Basic Kicks	Front Snap, Instep Kick, Thrust Kick, Side Snap Kick, Side Thrust
JUDO	
Basic Skills	Stance and Balance Basic Body Movements, The Grip
Breakfall Techniques	Falling Forward, Backward, Sideways, Free Practice
Throws	Breaking the Balanced Position, Fitting for the Throw, Leg Throw, Knee Wheel, Major Outer Reaping Throw
Pinning Techniques	Scarf Hold, Shoulder Hokd, Upper Four Quarter Hold, Side Four Quarter Hold
Joint Lock	Entangled Arm Lock
WRESTLING	Review of Skills Taught in the Seventh Grade Emphasis Upon Achieving a Higher Level of Performance Through Drill and Game Play
PHYSICAL FITNESS CONDITIONING AND BODY MECHANICS	
CALISTHENICS	
Isotonic Exercises	
Isometric Exercises	(See Grade Seven) Physical Fitness Testing Should be Conducted Annually. See Grade Seven for Description of Activities.

PHYSICAL EDUCATION - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PHYSICAL FITNESS CONDITIONING AND BODY MECHANICS	
WEIGHT TRAINING	
CIRCUIT TRAINING	(See Grade Seven)
PHYSICAL FITNESS TESTS	Physical Fitness Testing Should be Conducted Annually. See Grade Seven for Description of Activities.
AAHPER Youth Fitness Test	
N.Y.S. Physical Fitness Test	
OUTDOOR EDUCATION	
HIKING AND CAMPING	
Basic Skills	Elementary Backpacking and Mountaineering, Orienteering, Map and Compass, Tracking, Outdoor Cooking
Related Activities	Outdoor Photography, Adventure Camping, Conservation and Ecology, Nature Study, Cycling, Canoeing, Sailing, Ice Skating, Fishing, Water Safety, Skiing and Cross Country Skiing, Snow Shoeing, Bob Sledding
DANCE	
SOCIAL DANCE	
Basic Techniques	Dance Walk or Glide, Hesitation Patterns, Balance Patterns, Side-Close Patterns, Box Patterns
Basic Rhythms	Even Unit Rhythms, 3/4 Waltz Rhythm, Fox Trot Rhythm, Latin Dance Rhythm

PHYSICAL EDUCATION - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
DANCE	
Dance With Pertner	Social Amenities, Open and Closed Positions, One-Quarter Swing Turns, Veriation of Basic Patterns
Dance Types and Patterns	Swing or Jitterbug, Fox Trot, Waltz, Rhumba, Cha-Cha-Cha, Modern Populer Dances in the Open Position

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SCIENCE - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PHYSICS	
CHARACTERISTICS OF SOUND *pp: 1-30 Time: 12 periods	
How Sounds Are Produced	Sounds are produced by vibrating bodies. Loudness depends on the energy used to make the sound-amplitude. The number of vibrations per second determines the pitch (cycle or hertz). The frequency is the number of cycles or vibrations per second. The greater the frequency, the higher the pitch.
Changing the Pitch of Sounds	The pitch of a stringed instrument depends on length, tension, and width of the string. The greater the length and width, the lower the sound. The greater the tension, the higher the pitch.
Transmitting Sounds	Sound waves can only travel through a medium as longitudinal waves. Sounds will not travel in a vacuum.
Qualities of Sound	The quality of a sound depends on size, shape, and composition of the object making the sound. Thus, a trumpet, clarinet, violin, and the human voice differ in quality. Sound waves combine to produce beats. A vibrating object will cause another object to vibrate in the same frequency causing resonance.
CHARACTERISTICS OF LIGHT *pp: 31-70 Time: 15 periods	
Light As A Form of Energy	Light (unlike sound) does not require a medium. The speed of light is many times greater than sound.

*SCIENCE - GRADE 9, #9, 1968-69 Series

SCIENCE - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Light travels in straight lines as transverse waves on both the horizontal and vertical planes. Using polarizing lenses confirms the nature of light waves.
Shadows and Light	Shadows are produced when light strikes an opaque material. An artificial eclipse produced in the laboratory permits an analysis of the parts of a shadow and confirms that light travels in straight lines.
Reflection of Light	The angle of incidence of light striking a plane mirror is equal to the angle of reflection of the reflected ray. Laboratory procedures confirm the Law of Reflection and Diffusion of Light Images.
Refraction of Light	Light travelling at an angle from a less dense medium into a more dense medium is bent (refracted) toward the normal. Light travelling from a more dense medium to a less dense medium is refracted away from the normal.
Refraction and Convex Lenses	Convex lenses converge light to a focus. It also produces a magnified, real, inverted image. Laboratory investigations illustrate the behavior of convex lenses. A concave lens diverges light and produces an inverted, smaller image. Prisms break up light into a spectrum of colors following the Law of Refraction.
Light and Color	The color of light depends on the wave frequency of that color, The color of an opaque object depends on the color it reflects. The color of a transparent object depends on the color it transmits.

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SCIENCE - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CHEMISTRY	
REACTION OF METALS *pp: 72-118 Time: 15 periods	
Arrangement of Elements	Elements (metals and non-metals) are arranged as groups and families on the Periodic Table. Metals in the same family have similar properties. Elements in the same family have the same number of electrons on the outermost shell of their atoms. Properties of elements and combining qualities are related to the electrons (VALENCE). Metals transfer electrons. Non-metals receive electrons. A molecular formula of a compound represents electrons lent by the metal and electrons received by the non-metal to provide stability to the outer shells.
Chemical Reactions	Chemical reactions are represented by balanced chemical equations using chemical symbols and reflecting the number of electrons gained or lost by the reactants. The total weight of reactants is equal to the total weight of the products in a chemical reaction (Law of Conservation).
ACTIVITY OF METALS *pp: 119-142 Time: 10 periods	
Electrons and Activity	The activity of metals is related to the distance the outer electrons are from the nucleus and the number of electrons it can transfer. Laboratory tests confirm the ability of more active metals to replace less active metals in chemical reactions. Chemical corrosion (rusting, wearing away) is related to the chemical activity of the corroding agents. Alloys are combination of metals which resist corrosion.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Using Different Metals in the Home	The special properties of a metal determine its use - lead, copper, silver, steel, aluminum, etc. An analysis of the special properties of a metal helps us to use it most effectively.

EARTH SCIENCE

ASTRONOMY

*pp: 144-157
Time: 7 periods

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
The Study of Astronomy and Space Science	Man explores space, other planets, and stars to gain information about the origins of our own planet and its place in the universe.
Mirror and Lenses as Tools of Astronomy	Astronomers use reflecting and refracting telescopes to gather light information about objects in space. An understanding of the construction of telescopes aids in an understanding of how they operate in collecting light from distant bodies. The spectroscope is an instrument which analyzes the spectrum of light coming from space. Since each element has its own spectrum, the presence of a particular spectrum identifies the existence of certain elements on other bodies. The intensity of light from glowing bodies helps to provide information of distance, speed of movement, and temperature.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
THE SOLAR SYSTEM *pp: 158-169 Time: 8 periods	
The Sun's Energy	The sun converts hydrogen nuclei into helium in a process known as nuclear fusion with the release of heat and light. Sunlight provides heat for the earth and is part of the manufacture of food by plants which releases oxygen to sustain life.
The Motivation of the Moon	The revolution of the moon around the earth and the relative position of the earth, sun, and moon causes different phases to be seen. The moon's rotation is approximately the same as its revolution around the earth. Tidal changes occur as a result of the gravitational attraction of the moon.
Solar and Lunar Eclipses	Solar and lunar eclipses occur because of the relative positions and orbits of the earth and moon in regard to the sun.
ENERGY IN THE SOLAR SYSTEM *pp: 170-202 Time: 12 periods	
Moving Objects In Space	The tendency of an object in space to maintain whatever motion it had originally is called inertia. Inertia keeps objects in motion. The combination of the sun's gravitational attraction on a celestial body and its inertia results in the creation of orbits around the sun (inertia and centripetal forces). The earth and other planets follow elliptical paths around the sun. Orbital velocity is proportional to the distance from the sun.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
The Earth's Rotation	The rotation of the earth on its axis causes night and day, deflection of winds and currents (Coriolis Effect), and apparent motion of celestial bodies.
Seasonal Changes	Seasonal changes occur as a result of the earth's inclination and its revolution around the sun so that different parts receive more heat-producing vertical rays. The earth's movement in relation to other celestial bodies forms the basis of time measurements.
PEOPLE IN SPACE *pp: 203-223 Time: 7 periods	
Astronauts Ventures Into Space	Space travellers face many dangers in space including radiation, temperature extremes, lack of air, and special problems in obtaining food and water, and eliminating wastes. Scientists have developed techniques for eliminating the obstacles facing space travellers. Constellations of stars are one of the many ways that help space travellers navigate in space.
BIOLOGY	
CONTINUITY OF LIVING THINGS *pp: 224-270 Time: 18 periods	
Asexual Reproduction	The reproduction of an offspring from one parent is called asexual reproduction.

SCIENCE - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Organisms will reproduce asexually by binary fission, budding, and sporulation. In each case, the daughter cells are exactly alike the parent cell. Asexual reproduction involves mitosis, the division of chromosomes to each offspring without a reduction in the number for each cell. New plants may be grown from parts of a plant (root, stem, leaf) asexually by a method called vegetative propagation.
Sexual Reproduction In Plants	Sexual reproduction involves the combination of two gametes coming from different parents each bearing a reduced number of chromosomes (mitosis). In plants the stamen and pistil of the flower are the reproductive organs. Pollination involves the transfer of pollen from the stamen to the pistil by a variety of agents (wind, water, insects, animals). The combination of pollen nucleus (male gamete) with the female gamete (ovule) is called fertilization and gives rise to an embryo - the seed. The enlarged ovary, seed, stored food is called the fruit. Its purpose is to protect the seed, provide nourishment for the developing plant, and to attract animals to help disperse the seed.
Sexual Reproduction In Animals	Specialized organs in animals give rise to ova (female gamete) and sperm cells (male gamete). Fertilization involves the transfer and penetration of the sperm cell into the ovum to produce a zygote. Fertilization restores the chromosome number characteristic of that species. Fertilization and embryo development may occur outside of the body (water-living animals) or inside the mother's body (land animals).

SCIENCE - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HEREDITY *pp: 271-305 Time: 12 periods	
Characteristics Are Inherited	The work of Gregor Mendel forms the basis of our present understanding of the Laws of Inheritance. Traits are located in the genes of chromosomes found in the nuclei of cells. The recombination of gametes bearing reduced number of chromosomes restores the chromosome number in the offspring. The new individual now carries traits from both parents. If genes from different parents are the same (tallness, brown-eyed, etc.) the individual has a pure trait. If different, the trait is called a hybrid. The dominant gene shows itself over the recessive. Recessive genes will appear again in succeeding generations in a 3:1 ratio from hybrids.
Environmental Affect on Traits	Both heredity and the environment are important in trait development. Genes are not affected by environmental conditions and changes. Eugenics is the science of plant and animal selection and breeding to improve the stock for greater yield.

SOCIAL STUDIES - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
WORLD STUDIES: EASTERN CIVILIZATIONS REGIONAL STUDIES	Note:
JAPAN *pp. 4-7 Time: 4 weeks	This course of study presents case studies of seven culture regions. Each school may want to select case studies and to adjust suggested time allotments to meet local conditions.
PEOPLE'S REPUBLIC OF CHINA *pp. 8-11 Time: 6 weeks	See the sample case study for sub-topics.
SOUTHEAST ASIA *pp. 12-15 Time: 5 weeks	See the sample case study for sub-topics.
THE SUB-CONTINENT OF INDIA *pp. 16-19 Time: 5 weeks	See the sample case study for sub-topics.
THE MIDDLE EAST AND MOSLEM SOCIETY *pp. 20-23 Time: 5 weeks	See the sample case study for sub-topics.
SUB-SAHARAN AFRICA *pp. 24-27 Time: 6 weeks	See the sample case study for sub-topics.
UNION OF SOVIET SOCIALIST REPUBLICS (Bridge Between East and West) *pp. 28-32 Time: 6 weeks	See the sample case study for sub-topics.

*HISTORY AND SOCIAL SCIENCE SERIES - GRADE 9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
JAPAN (Sample Case Study)	
Geographic Factors Influence Economic and Cultural History	Adequate domestic supplies of almost all basic industrial raw materials are lacking; only one-sixth of the land is usable for agriculture.
Continuity and Change are Characteristics of Political History	The end of feudalism and beginning of modernization began with the Mejii Restoration.
Foreign Institutions Have Been Adopted and Assimilated	Early Japan was greatly influenced by Chinese civilization; modern Japan by Western civilization.
Major Changes Have Taken Place Since 1945	Japan has developed into one of world's leading industrial nations.

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SCOPE AND SEQUENCE

SPECIAL SUBJECTS

FOR THE

INTERMEDIATE AND JUNIOR HIGH SCHOOLS

FOREIGN LANGUAGES

HOME ECONOMICS

INDUSTRIAL ARTS

TYPEWRITING

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
LANGUAGE ACQUISITION IN CHINESE, FRENCH, GERMAN, HEBREW, ITALIAN, RUSSIAN, AND SPANISH	
Listening	The initial processes are the same as shown in FOREIGN LANGUAGES (FLES). Listening is practiced by means of conversational and aural comprehension exercises, dictations, oral summaries and taped material.
Speaking	The initial processes are similar to those shown in FOREIGN LANGUAGES (FLES). There is a wider range of language patterns in the dialogues, role playing, situation simulations and personalized questions. Reading is used as a basis for speaking activities.
Reading	The initial phase is similar to FLES. Reading selections of cultural value are related to personal experiences. Inferences from cognates and context are developed.
Writing	Copying of previously mastered material is followed by dictation and guided writing, e.g. completion of sentences and dialogues and responses to questions. Freer forms of writing include guided compositions, pen pal letters, brief summaries, and changes of narratives to dialogues.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Chinese Calligraphy	Calligraphy patterns are traced in the pre-reading period. Outline maps, pictures and color charts are labeled, titled and captioned. A picture dictionary in Chinese is developed.
Cultural Information	Procedures on a more advanced level than those in FLES are used. Fairs, festivals, fiestas and assembly programs convey cultural information. The cultural background of various countries are part of reading selections. The transportation, currency, daily life in the cities and first impressions are discussed by means of a simulated trip to the country.

GRAMMATICAL STRUCTURES OF CHINESE, FRENCH, GERMAN, ITALIAN, RUSSIAN AND SPANISH

CHINESE - LEVEL I

* pp. 35-47

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Nouns	Nouns include specified and numbered nouns and those modified by stative verbs, clauses, and other nouns.
Pronouns	Included are personal, interrogative, and demonstrative pronouns and those used with personalized and specified nouns.
Measures	In addition to the measures ge, jr, ben, fu, jyan, shwang, tyau, ban and ke there are the verbal measures tsz, yisyaer, hwei, byaner and bu.
Verbs	Verbs include action, stative, auxiliary, compound, and equative verbs. Included are co-verbs indicating direction, interest and motion; the copula shr, auxiliary verbs hwei, and you to indicate future; gwo as a co-verb to indicate past tense; gei as a main verb, co-verb, and preposition; the co-verb ba construction and compound verbs with lai and chyn. Distinction is made among the optative verbs neng, hwei and keyi.
Adjectives	This includes youde ... youde and youse ... youse in parallel construction.
Adverbs	Subdivisions of this topic are the use of fixed and movable adverbs and of the

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*CHINESE: LEVELS I and II

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Chinese Level I cont'd	expression dou, the distinction among hai, ye and dzai and the addition of shr for emphasis.
Particles, Prefixes and Suffixes	Involved in this topic are the use of men, ma, dz, le to show completed action, ne to show continuance, the negative particle mei before you, the particle swo and the structural particle de. Also included are the diminutive suffixes er and dz and the prefixes mei and meiyou.
Negatives	The use of the negatives bu and meiyou is included.
Interrogative Forms	The subtopics are the use of ne, of a particle at the end of a statement, of the affirmative-negative construction, of simple negative forms, of interrogative pronouns and adjectives, and of the use of alternatives.
Comparison	In the study of comparison the use of yidyaner, dasyou and bi are dealt with. Included are dzwei as it relates to the superlative of adjectives and geng and dzwei as they relate to degrees of comparison.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FRENCH - LEVEL I *pp. 91-94	
Articles	Articles include the definite and indefinite form contractions with à and de, the use of de to show possession, the partitive and the use of the article with parts of the day.
Nouns	The gender of nouns and the formation of the regular plural and irregular plurals are studied.
Pronouns	This includes the study of subject, direct object, interrogative and demonstrative pronouns. The subtopics dealt with are the agreement and position of adjectives, the agreement of regular feminine adjectives, irregular feminine forms and interrogative and possessive adjectives.
Negatives	Included are ne ...pas, ne...jamais, ne...plus and ne...rien.
Verbs	Verbs include the present tense of the three regular conjugations, the imperatives and idioms with faire and avoir. The present tense of the following irregular verbs is taken: aller, dire, faire, lire, écrire, mettre, sortir, partir, prendre and vouloir.
Numbers	The cardinal numbers from 1 to 1000 are studied.

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*FOREIGN LANGUAGE REVISION PROGRAM: FRENCH

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
FRENCH LEVEL II * pp. 95-96	
Articles	This topic deals with the omission of the definite article with adverbs and nouns of quantity.
Adjectives	The use of *ce*, *cette*, *cet* and *ces*, the agreement and position of irregular adjectives and the comparison of regular and irregular adjectives are studied.
Pronouns	Included in this topic are disjunctive, direct, indirect, double object and the interrogative pronouns *qui*, *que*, *quoi* and *qu'est-ce qui*. The simple use of *y* and *en* and the use of *y* and *en* in combination are also included.
Negatives	*Ne*...*personne* and *ne*...*que* are additional negative forms.
Verbs	The verb forms included are the passé composé (with avoir) of the three regular conjugations and of the irregular verbs taken in Level I and Level II, the passé composé of *être* verbs and the imperfect of regular and irregular verbs. The use of object pronouns with the passé composé, agreement of the past participle, reflexive verbs and verbs requiring spelling changes in certain tenses are also dealt with.

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*FOREIGN LANGUAGE REVISION PROGRAM: FRENCH

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
GERMAN - LEVEL I *pp. 39-40	
Articles	This includes all forms of the definite and indefinite articles.
Nouns	All cases of the plural of high frequency nouns are studied along with the forms of weak nouns, such as *Junge*, *Herr*, *Mensch*, *Student*, and *Nachbar*.
Pronouns	Included are the singular and plural of the personal pronouns, polite form of address, familiar forms, the non-personal use of the pronouns in the third person and *der*-words used as pronouns.
Adjectives	Besides uninflected adjectives, possessive and demonstrative adjectives are studied. Included are inflected adjectives as they occur in fixed phrases, such as *Guten Morgen*, *Guten Tag* and *Guten Appetit*.
Prepositions	Subtopics are the present, simple past, compound past and future tenses of the verb, the compound tense with *sein*, the imperative, the present tense of the modal auxiliaries, the reflexive verbs *sich freuen*, *sich kämmen*, *sich schämen* and *sich waschen*, and irregular verbs of high frequency.

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*GERMAN: LEVEL I-IV

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
GERMAN - LEVEL II *pp. 63-65	
Nouns	This involves the gender of compound nouns and of those determined by suffixes such as chen, lein, heit, keit and ung, the plural of additional high frequency nouns, and the omission of the article in certain instances.
Adjectives	Included are the strong, weak and mixed declensions of adjectives and the comparison of adjectives.
Pronouns	The pronouns include the relative pronouns, the wo-combinations used as pronouns, and the special use of wer and was.
Prepositions	A review of the doubtful prepositions an, auf, hinter, in, neben, über, unter, vor and zwischen is included with the prepositional compounds with da- and wo-.
Verbs	This includes all tenses of the indicative, verbs with separable and inseparable prefixes, mixed verbs, modal auxiliaries in the present tense, verbs followed by the dative, and additional irregular verbs.
Word Order	This involves the word order in subordinate and relative clauses and the use of interrogatives as subordinating conjunctions.

*GERMAN: LEVELS I-IV

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HEBREW - LEVEL I *pp. 39-41	
Nouns	Nouns include the plural of masculine and feminine nouns taught in Level I, irregular plurals, nouns with possessive adjectives and dual plurals.
Adjectives	This involves the agreement and position of adjectives, demonstrative adjectives and the attributive and predicative uses of adjectives.
Pronouns	Included are subject pronouns, direct object, indirect object, and possessive pronouns.
Verbs	The verb forms are the present tense of Level I verbs, imperative forms, the infinitives of high frequency verbs, and polite expressions.
Numbers	Included are ordinal numbers 1 to 10, cardinal numbers 1 to 100 and the telling of age.
Other Grammatical Structures	Other grammatical structures are the sign of the definite object, interrogative expressions and the negative.

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*HEBREW: LEVELS I-IV

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
HEBREW - LEVEL II *pp. 57-58	
Nouns	This includes the possessive endings of masculine and feminine singular nouns, the possessive endings of segolate nouns, the plurals of segolate nouns, special masculine and feminine nouns, irregular nouns of high frequency, and dual plurals.
Adjectives	The comparative and superlative of adjectives are studied.
Numbers	Included are the ordinal numbers from 1 to 100 and the cardinal numbers from 1 to 100.
Verbs	Subtopics are *kal* of intact, *pe alef*, *pe yod*, *pe nun*, *ayin vav*, *ayin yod*, *lamed alef* and *lamed he* verbs, and the *pi'el* of intact verbs.
ITALIAN - LEVEL I ** pp. 91-93	
Articles	This involves the definite and indefinite articles, the use of *di* to show possession and contractions with *a*, *da*, *in*, *su*, *con* and *per*.
Nouns	Included are the gender of nouns ending in *o*, *a*, and *e* and regular and irregular plurals of nouns.
Adjectives	Classes of adjectives, the agreement and position of adjectives, demonstrative adjectives, and adjectives with mixed genders are included.

*HEBREW: LEVEL I-IV

**FOREIGN LANGUAGE REVISION PROGRAM: ITALIAN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Pronouns	Subject, object, interrogative and relative pronouns are dealt with.
Verbs	The tenses are the present and present perfect of the three regular conjugations and the present tense of the irregular verbs.
Numbers	The cardinal numbers 1 to 1000 are studied along with simple arithmetical expressions such as *e*, *più*, *meno*, *per*, *diviso per*.
ITALIAN - LEVEL II *pp. 94-95	
Nouns	The plurals of nouns ending in -*cia*,-*gia* and-*ista* and masculine nouns ending in -*o* and having a feminine plural ending in -*a* are included.
Adjectives	Subtopics are possessive adjectives, interrogative forms *quale* and *quanto*, demonstrative adjectives *questo* and *quello*, and the comparison of regular adjectives.
Pronouns	The pronouns dealt with are possessive, interrogative, direct and indirect object, demonstrative, and relative pronouns. Included are single pronoun objects with the imperative and pronoun objects with *ecco*.

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* FOREIGN LANGUAGE REVISION PROGRAM: ITALIAN

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Verbs	The tenses are the present perfect of verbs conjugated with avere, the imperfect of essere, avere and three regular conjugations, the future, and the preterite of regular verbs and andare, venire, salire and scendere. The imperative of the regular conjugations and the reflexive verbs lavarsi, vestirsi, sedersi, alzarsi, and scusarsi are also studied.
RUSSIAN - LEVEL I *pp. 40-43	
Nouns	The singular and plural of all declensions are included.
Pronouns	This involves the personal, possessive, demonstrative, relative and interrogative pronouns.
Adjectives	Included are agreement with nouns, the declension of the hard and soft endings in the singular and plural and the use of adjectives as nouns.
Adverbs	Subtopics are the positive degree taken from the short form of the neuter adjective, adverbial phrases and adverbs denoting place and direction to and from a place.
Prepositions	Included are high frequency prepositions governing the genitive, dative, accusative, and the instrumental and prepositional cases.

*RUSSIAN: LEVELS I-IV

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Spelling Rules	The replacement of letters in cognates, notably w, h, th, and u in au and eu are studied.
Verbs	Among the topics are the present, past and future of the high frequency perfective and imperfective verbs of motion and reflexive verbs.
Numerals	This involves the study of the declension of cardinals 1 to 30, the nominative only of cardinals 31 to 100 and the declension of ordinals 1 to 30.
SPANISH - LEVEL I *pp. 94-96	
Articles	Included are the singular and plural of the definite and indefinite articles, contractions with a and de and the use and omission of the article in specific instances.
Nouns	Subtopics are the number and gender of nouns and the use of the personal a and of de to show possession.
Pronouns	The direct object pronouns and their position when they are used with the infinitive and the present tense are studied.
Adjectives	This involves the number and gender of adjectives, simple agreement, possessive and demonstrative adjectives, and the use of the adjective with the exclamatory and interrogative que.

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*FOREIGN LANGUAGE REVISION PROGRAM: SPANISH

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Also included are common limiting adjectives such as otro, mucho, poco, mismo, todo, bastante and demasiado and the short forms of bueno, malo, primero, tercero, ciento and uno.
Interrogatives	Interrogative expressions such as cómo, dónde (adónde), por qué, cuál, quién (a quién, de quién), cuánto and qué are studied.
Negatives	This involves the placement of no and the negatives nada, nadie and nunca.
Question Formation	This includes inverted word order and the use of expressions such as ¿verdad?, ¿no es verdad? and ¿no?.
Verb Structures	Included are the present tense of regular and selected irregular verbs, the preterite of regular verbs, the use of hay and había, the principal uses of ser and estar, the complementary infinitive and the expressions ir a to express future, and para plus the infinitive in response to ¿para que?.
Numbers	The cardinal numbers from 1 to 100 are studied.
SPANISH - LEVEL II *pp. 97-99	
Articles	This includes the masculine article with nouns ending in -ma, -pa and -ta and the use of articles with time expressions, common geographical terms, reflexive verbs to replace the possessive adjective with parts of the body

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*FOREIGN LANGUAGE REVISION PROGRAM: SPANISH

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
(Spanish Level II cont'd)	and articles of clothing and nouns of weight and measure.
Nouns	The comparison of equality and inequality such as tanto talento como and más dinero que is studied.
Pronouns	Included are the indirect object with its redundant use as in Le doy la plata a Pepe, the indefinite pronouns algo, alguien and todo and the demonstrative pronouns including the neuter forms esto, eso and aquello. Other subtopics are the relative pronouns que and quien(es) after a preposition and the use of object pronouns for clarification and emphasis as in the sentence Le escribió a él.
Adjectives	This includes the short forms of grande, alguno, ninguno and santo, the comparison of equality and inequality and superlative endings.
Adverbs	Formations with -mente and the use of adverbs in comparisons of equality and inequality are studied.
Verb Structures	This involves the preterite of irregular verbs, the imperfect of regular and irregular verbs, a comparison of the uses of the imperfect and the preterite, the idiomatic use of hace plus the present tense and hace plus the preterite. Also included are the future of regular and irregular verbs, the use of the present tense to denote the future, the conditional of regular verbs and common verbs followed by a and de before the infinitive.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
	Additional topics are radical-changing verbs, orthographic-changing verbs, infinitives after prepositions as in *después de comer* and *sin hablar*, *gustar* and polite commands.
LATIN - LEVEL I	
Vocabulary * pp. 8-12	Latin vocabulary is acquired through context and a study of synonyms, antonyms, roots, prefixes and suffixes.
Forms *pp. 12-14	The essential structural difference between Latin and English lies in the high degree of inflection inherent in the Latin language. Emphasis is on the forms of high frequency, such as those of the active voice and the nominative, accusative and ablative cases. Forms are to appear in context.
Reading *pp. 15-20	Vocabulary, forms and grammatical structures are preparation for reading. Reading is practiced by intensive and extensive reading lessons. The translation of Latin should emphasize the meaning of a thought unit rather than that of individual words.
Memory Work *pp. 21-22	Many Latin phrases, proverbs, literary quotations and abbreviations are widely used in English.

*LATIN: LEVELS I-IV

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
Derivation and Word Study *pp. 22-24	Roots, prefixes and suffixes show the profound influence of Latin on the English language.
Dialogue *pp. 25-28	Simple language patterns can be used in dialogues. Memorized dialogues can be adapted and personalized.
Cultural Information *pp. 39-41	The periods of Roman history, Roman government, classes of society, famous people in Roman history, Roman life, education, dress,recreation, religion, and famous myths are topics of cultural information.

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*LATIN: LEVELS I-IV

HOME ECONOMICS

7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
FOODS AND HOME EXPERIENCES I	
Nutrition and Food * pp. 33-34 pp. 30-31 ** pp. 33-158	The adolescent body has specific food needs. A variety of guides to good nutrition such as Basic Four and Star of Good Eating are available. Calories are a measure of heat and energy. Proper meal planning must meet the food needs of the day. A variety of methods may be used to cultivate desirable food habits (open mindedness, food tasting, positive food intake habits). Foods can be attractively prepared using basic cooking skills in simple dishes, baked goods, sauces, fresh and dried fruits, vegetable salads and protein dishes .
Purchase of the Family's Food * pp. 34-35 ** pp. 160	Labels provide important information. Specific criteria and standards for selection of food products should be applied. Considerations in buying fresh, preserved, or convenience foods help determine the selection. Shopping manners are responsibilities of a good consumer.
Use and Care of Household Equipment and Furnishings * pp. 36 ** pp. 27 *** pp. 41, 44, 46	Cleanliness and order can contribute to happy homes. Specific use of methods for care and maintenance appliances is essential (range, refrigerator, counter tops). Suitable maintenance of furnishings preserves an attractive appearance. Proper dishwashing procedures are necessary for cleanliness and health. Laundry procedures are an essential knowledge for school and home.

* HOME ECONOMICS 7,8,9
** YOUNG NEW YORKER COOKBOOK
*** A HANDBOOK FOR TEACHERS OF HOME ECONOMICS

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
FOODS AND HOME EXPERIENCES I	
Managing Time and Energy in Home Activities * pp. 37	Analysis and decision-making is basic in managing home activities. Efficient work habits and scheduling of time is valuable in performing home activities. Proper storage of food and equipment is basic to efficient home management.
Social Acceptability Within the Home * pp. 38	Correct table setting and service add to eating comfort Acceptable table manners and table conversation help make mealtime pleasant. Members of the family have specific roles when guests come into the house. Guests have specific roles when visiting.
Getting Along in the Family * pp. 39, 40	The work and happiness of the home depend upon the contribution of each child in the family. Each family member has obligations, contributions, and rights. The family influences the development of an individual's competence in adjusting to society.
Looking Ahead to Careers in Home Economics * pp. 40, 41	Home Economics offers many career possibilities through the use of various techniques - bulletin boards, interviews, assembly programs, radio and television, commercials, etc.
Using Leisure Time for Personal Recreation * pp. 41, 42, 43	Leisure time affects health, family relationships and friendships. Community resources are available for leisure time activities. Leisure time can be used to develop hobbies and talents. Avocational interests can lead to vocations.
Good Health and Good Looks * pp. 43	Good looks reflect good health. Diet directly affects complexion, hair-condition, teeth, nails, vitality, and posture. Good grooming including body cares contributes to good looks.

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
FOODS AND HOME EXPERIENCES II	
Nutrition and Food * pp. 45, 46 ** pp. 33-158 ** pp. 185-190	Each nutrient has a specific function in the utilization of food by the body. The daily food intake should meet the energy and nutrient needs of the body. Detailed guides to good nutrition consider the many factors that affect food needs and utilization. Special consideration should be given to circumstances such as teen-age pregnacies, active sports participation, adolescense and illness recuperation. Meal plans should meet the varied needs of the family group (include the infant, young child, lactating mother, grandparent, etc.). More advanced techniques and processes such as casserole cookery, pastry making, pressure cooking, molding salads, roasting, baking and steaming add variety and interest in family meals.
Hospitality * pp. 46, 47	Extending and responding to invitations, accepting hospitality, and writing thank you notes are a part of gracious every day living. Many styles of table setting such as family buffet and individual service are standardized.
Hospitality-Social Graces * pp. 47 ** pp. 33-168, 225	Each child has an opportunity to make hostess gifts such as casseroles, baked goods, and nutritious goodies. Each child has an opportunity to make and carry out plans for celebrations and family events. Use of food preparation skills encourage good neighborliness through activities such as extending hospitality and helping in emergencies.

* HOME ECONOMICS 7,8,9
** YOUNG NEW YORKER COOKBOOK
*** A HANDBOOK FOR TEACHERS OF HOME ECONOMICS

HOME ECONOMICS - GRADES 7-8-9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
FOODS AND HOME EXPERIENCES II	
Furnishing the Home Attractively * pp. 47, 48	Color, line, and other art principles are related to home furnishings. Flower and plant arrangements, furniture arrangements, accessories, and art objects are basic to furnishings. Convenience and practicality are essential to attractive furnishings. Each home should express the personality of its members. A knowledgeable consumer learns to evaluate the construction of home furnishings.
Sharing in the Care of The Home * pp. 48, 51 ** pp. 41, 44-49	Work plans for daily and periodic care of the home should involve all family members. Storage facilities should be arranged according to frequency of use. Cleaning agents perform specific functions. Consumers should know how to use and care for mechanical equipment. Surfaces such as wood, tile, stainless steel, enamel, and formica require special handling.
Managing Money for Home and Personal Use * pp. 49, 51	Evaluation of factors affecting the use of money increases family satisfactions. Money management is essential for planning for personal and family spending. Cost of computing menus prepared in class may be used as a gauge for evaluating home menus. Consumer information is necessary for the food shopper such as evaluating newspaper ads, understanding grade, labeling, and money value of services.
Getting Along with Others * pp. 50	Good manners in school include the use and care of facilities. Consideration of others is the basis of behavior in public places. Community services to the home and family are more efficient if participants are cooperative. Competences in developing human relationships involve skill and practice. Leisure time provides opportunities for shared family and individual activities such as the use of music, radio, TV, gardening, picnics, home workshops, games, hobbies, and talents including

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CONTENT AREA AND TOPICS

FOODS AND HOME EXPERIENCES III

Nutrition and Food * pp. 53 * pp. 30, 31 ** pp. 159-230	The science of nutrition has an historical development. The nutrients in foods differ and can be compared by reading nutritional values on labels. Statements on food advertising should be analyzed. Government agencies safeguard food and disseminate information. All foods including foods for special occasions should be evaluated as to their nutritional value. More advanced techniques of food preparation are used for special occasions such as: hors d'oeuvres, souffles, pressed cookies, and au gratin dishes. Food preservation for special occasions may include freezing and pickling.
Planning for Spending the Family Income * pp. 54-55	Various methods for budgeting and account keeping can be used for handling family monies. Various methods of buying and paying are available to individuals and families. The family council is a helpful, wholesome way to plan family expenditures.
Housing the Family * pp. 54, 55	Space requirements are based on needs of the family members. The pro's and con's of owning vs renting should be considered by each family group. Choosing a location for a home should be based on established criteria.
Living Happily with Family and Friends * pp. 55	Family constellations are varied. Family customs and food habits reflect family origin and influence of friends and family.

* HOME ECONOMICS 7,8,9

** YOUNG NEW YORKER COOKBOOK

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CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
FOODS AND HOME EXPERIENCES III	
Comparing American and Foreign Foods and Customs * pp. 56 ** pp. 191-218	American and foreign meals use similar food items in different combinations. Nutrition food guides may be used to evaluate nutritional strength and shortcomings of food patterns of other lands. Techniques of food preparation may be applied to meals using foreign dishes such as: Chicken a la N'Catietro, Pepper Steak, Kedgeree, Cream Puffs, Ham and Noodle Pudding; Spanakoryzo, Dutch Apple Cake, Veal Paprika.
Friendship between Boys and Girls * pp. 56	Skills of social intercourse are developed with practice. Entertaining at home is a way of practicing special skills. Parental guidance in forming friendships is desirable.

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
CLOTHING AND HOME EXPERIENCES I	
Construction of Simple Cotton Garments * pp. 65	The selection of clothing for school should be appropriate. Patterns should be selected based on ability and experience of the individual. Individuality is expressed through choice of fabric, trimmings, and accessories.
Suitable Techniques * pp. 64, 65	Simple techniques can be handled by the beginning sewer such as: stay-stitching, darts, tucks, gathers, seams, seam finishes, facings, zipper insertion, skirt band, hem, machine made buttonholes, and sewing on buttons.
Suitable Garments * pp. 65	Garments that are suitable for beginning sewers may be: simple shirt, simple pants, dashiki, vest, skirt, and jumper.
Suitable Fabrics * pp. 65, 66	Fabrics selected should be suited to the ability level of the beginning sewer such as: solids, overall prints, non-sleezy fabrics, and fabrics without a nap.
Using the Sewing Machine: Operation, Care * pp. 66, 67 ** pp. 46, 48-49	Learning to operate the sewing machine can be a satisfying experience for the beginner. Information on the care and use of the sewing machine is included in the instruction booklet. Regular care is essential for expensive equipment.

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CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
CLOTHING AND HOME EXPERIENCES I	
Using a Pattern * pp. 67, 68 ** pp. 59-60	The pattern envelope and the guide sheet provide the information necessary for all garment construction such as: size, layout, cutting out, construction techniques, finishing, and fitting a garment. Quality workmanship is a part of garment evaluation. Evaluation of the completed garments may be done through class fashion show or similar culminating event.
Good Grooming * pp. 69, 70 ** pp. 31-32	Improved personal appearance may result from student motivation through presentation such as fashion shows and exhibits.
Social Behavior * pp. 69, 70	Many factors contribute to attractive appearance such as good posture, proper walking, social behavior, and wardrobe selection.
Study of Fiber and Fabric * pp. 71	Fabrics are made from a variety of fibers. A variety of cotton fabrics is available for different uses.
Assisting in the Care and Repair of Clothing of Family Members * pp. 71	Caring for one's own clothes contributes to happiness in the home. Regular daily care of clothing is an important habit to establish to prolong use of garments. Methods of laundering and care vary according to type of fabric.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CLOTHING AND HOME EXPERIENCES II	
Construction of Garments * pp. 64, 73 ** pp. 59, 60	Seam finishes, cutting and joining bias binding and facings, collar attachment, zipper insertion, and patch pockets are appropriate techniques to complete advanced garments. Garments that are suitable for the intermediate level sewer are: unlined suits, jackets, shirts with set-in sleeves, shirts, shorts, pants and robes. Fabrics that are suitable for the intermediate level sewer are: corduroy, woolens and cottons, and synthetic combinations in plain and plaid patterns. Quality workmanship is a part of garment evaluation. Evaluation of the completed garment may be done through a fashion show or similar culminating event.
Appearance and Personality * pp. 75	Fashion enhances personality through appearance. Media services provide current information regarding fashion.
Buying Clothing Wisely * pp. 75	Purchasing clothing requires consideration such as needs of family members, cost, care and storage. Wardrobe analysis and planning are essential to making wise purchases. Required garment labelling identifies characteristics and care of fabrics.
Caring for Family's Clothing * pp. 76	Established routines for care prolong the life of clothing. Adequate storage facilities reflect good management and insure the care of one's clothing.

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** A HANDBOOK FOR TEACHERS OF HOME ECONOMICS

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CLOTHING AND HOME EXPERIENCE III	
Construction of Garments Requiring Advanced Techniques and Using Fabric More Difficult to Handle * pp 77 ** pp 59-60	Setting in sleeves, bound buttonholes, interfacings, tailoring techniques, simple decorative details for garments, cordings and pipings are appropriate techniques needed to complete advanced garments. Garments that are suitable for the advanced sewer involve the use of fabrics more difficult to handle such as velvet, double knits, knits, sheers and simulated leather. The pattern envelope and the guide sheet provide the information necessary for garment construction. Evaluation of the completed garments may be done through a fashion show or exhibit.
Buying Clothing Wisely * pp 78	The decision to buy or to make a garment involves considerations such as time, energy, money, and ability to produce quality workmanship with difficult to handle fabrics and styles.
Caring for the Family's Clothing * pp 78	Used clothes may be recycled and refurbished to obtain an up-to-date look for self and other members of family. Additional techniques using new tools in the market will facilitate minor repairs on clothing. Specific techniques may be used to plan and pack wardrobes for travel and to care for clothing when traveling.
Appearance and Personality * pp 79	Individual personality and appearance are reflected in an understanding of people and ability to converse.

* HOME ECONOMICS 7,8,9

** A HANDBOOK FOR TEACHERS OF HOME ECONOMICS

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
BOUTIQUERIE (NEEDLECRAFT)	
Construction of Personal Accessories * pp. 87, 88	Accessories revitalize wardrobes. Color selection relates to personal wardrobe colorings. Clothing accessories should be evaluated in terms of use, beauty, cost, length of expected service, time, labor and required material needed. Manufactured items made at home should be compared for quality and availability. Students' clothing should be analyzed for fabric, fiber content, cleaning and care requirements. Hang tags and labels should be studied for information according to present government regulation. A commercial or pupil developed pattern may be used to construct a personal accessory. Accessories suitable for construction in this course are: tote bags, vests, belts, collars, cosmetic cases, laundry bags, pajama cases, and hats.
Construction of Knitted and Crocheted Articles * pp. 88	Knitted or crocheted items may include such varieties as scarves, hats, mittens, dog's coats, edgings, and afghan squares. Proper selection and use of yarns, tools, and equipment are needed for successful completion of project. Knitting and crocheting skills have aesthetic value.
Sharing in Decorating The Home * pp. 113, 114	Home accessories can be used to make the home more attractive. Small articles to be used in the home can be constructed. Needlecraft is a worthwhile leisure time activity. Needlecraft involves the following skills: needlepoint, bargello, embroidery, crewel, applique, macrame, latch hooking, patchwork, and quilting. Selection, placement and choice of color of accessories can be used to enhance beauty and appearance of the room.
Making Gifts of Fiber and Fabric * pp. 115	A visit to department stores and needlework shops will stimulate new ideas for toys and novelties, comparison of prices, and develop an appreciation of the beauty and value of handcrafted items.

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* HOME ECONOMICS 7,8,9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
BOUTIQUERIE (NEEDLECRAFT)	
Making Gifts of Fiber and Fabric * pp. 115	Items using recycled fabrics can provide pleasure through graciousness in giving gifts. Gift wrapping can express student creativity. Gift giving can develop an appreciation of traditions at home and in other countries.
Managing Money for Personal Use * pp. 91	Planning for spending personal allowance should result in maximum satisfaction. Guidelines should be established when making purchases. Family ideals and values are important consideration for saving and expenditures of money. Needlecraft skills can be used as a means of earning money.

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CHILD CARE	
Understanding Young Children * pp 95-96	All children have basic needs. Understanding children's problems may help solve them. Making friends with children, winning their cooperation and disciplining them is based on understanding children.
Recognizing the teenager influence on young children * pp 96	Teenagers have a responsibility to younger members of the family. Teenagers may serve as baby sitters in the care of younger children. Helping children develop their greatest potential requires an understanding of them. There are reliable sources of information about children that should be consulted.
Food needs and eating habits of children * pp 97, 98	Children have specific nutritional needs. Mealtime can serve to establish good attitudes toward food. Family meals can be modified to meet the need of young children. Advertising has a strong influence on establishing attitudes toward food. Simple meals should be prepared that are suitable to children.
Clothing needs and dressing habits * pp 98	Children have special clothing needs. Children have specific attitudes towards clothing. Children should be encouraged to dress themselves at an appropriate age. Teenagers can help in the dressing of toddlers Clothing for children should be selected according to age needs, safety and health. Proper storage and care of clothing will help children become more self sufficient.
Rest for children * pp 99	Young children have a need for sleep and rest. Symptoms of fatigue can be recognized. Provisions for sleep and rest are a necessary part of the child's day. Preparing a child for sleep and rest is a specific skill. Good sleep habits should be established for a young child. Family cooperation is essential in developing proper sleep habits.

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* HOME ECONOMICS 7,8,9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CHILD CARE	
Play for children * pp 101	Children learn through play. Children's play requires direction and planning. There are various kinds of play such as imaginative, manipulative, and dramatic. Materials for play may be made at home or purchased. Activities such as reading, telling stories, art, music, rhythm play, and television enhance the education of the younger child and teenager. Play material should be evaluated for safety, economic, and educational worth. Television programs should be monitored for suitability.
Understanding oneself through learning about others * pp 102	One can recognize evidences of growth and maturity. Observation of children's development and behavior helps one understand one's own personality.
Learning how to make the home safe and hygienic for children * pp 102	Responsibility for safety requires the concern of all family members. Proper storage and handling of poisons in the home can help to avoid common accidents. Hygienic handling of foods prevents the spread of infection. Specific safety devices should be provided and in use when riding in a car.
Helping when there is illness at home * pp 105	Simple meals can be prepared which are nutritious and appealing to an ill child. A sick child requires special care. A teen-ager can help a sick child through suitable games and activities.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CAREER EXPLORATION	
Career Orientation to the World of Work Module Title: "Take Time to Think About Tomorrow"	Home Economics offers a wide variety of career choices. A social security card and working papers are needed by students who would like to work. Many ways to obtain a job are available. First impressions are important when looking for a job. Avocations, talents and personal interest can lead to a job. A job-seeker must understand and interpret the abbreviations used in want-ads. Employers and employees have definite rights and responsibilities.
Careers Related to Child Care Module Title: "Careful, Special Handling... A Career in Child Care"	Home Economics relates to careers in Child Care Services. A child care worker has definite job responsibilities. A book to be read to a young audience should be carefully selected. A child's book should be presented to a young audience with enthusiasm, emphasizing words that rhyme and words with audible sound effects. Play activities that develop small and large muscles should be identified. Toys should be evaluated for educational value and safety. A simulated child care job related experience helps to prepare the potential child care worker.
Careers Related to Consumer Services Module Title: "You, The Consumer Advocate"	Home Economists with a career in Consumer Affairs help consumers in the following ways: to be aware of dishonest sales practices and to make wise decisions. Consumer interests can be protected by analyzing advertisements. Projects which benefit consumers can be planned and carried out. Sales tricks used by dishonest sales personnel can be identified and explained. Advertisements can be analyzed in relation to consumer interests. Government agencies are available to help consumers with their problems. Career opportunities in Consumer Affairs are available.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CAREER EXPLORATION	
Careers Related to Fashion and Clothing Module Title: "Fashion and Clothing Careers: Where the Action Is"	Many exciting jobs are available in the fashion and clothing industry. Assembly line method is used when clothing is made in a factory. Job analysis sheets for producing articles are necessary to expedite mass production. The information on care labels is an important help to the consumer. Careful planning is necessary for a successful boutique sale. The salesperson plays an important part in the success of any business. Analysis of advertising techniques used in mass media is helpful to business enterprises. Simulated business experiences should be evaluated for meaningful learning.
Careers Related to Foods Module Title: "Batter Out...Money In"	Home Economics relates to careers in the foods industry. Each job in this industry has specific responsibilities. Recipes can involve jobs done by different members of a food preparation team. Sanitary procedures must be practiced when preparing food items. Job analysis is important to a successful business venture. Mass media techniques help to promote business. Successful salespersons use definite techniques. Simulated job related experience is improved through careful evaluation.
Careers Related to Housing Module Title: "Get Ready for a Career in Housing"	Home Economics relates to job opportunities in the area of Housing. A Tenant Orientation Supervisor or Aide has definite job responsibilities. A Home Economist with the Housing Authority has definite job responsibilities. Various ideas can be used to improve storage in an apartment with inadequate closet space. Suggestions can be explored for ways to increase privacy when bedrooms are shared. Knowledge of simple home repairs such as: changing the plug of an electrical appliance, and changing a washer on a faucet can enhance the efficiency of a Tenant Orientation Aide. Tenants and landlords have rights and responsibilities.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
CAREER EXPLORATION	
Careers Related to Interior Design Module Title: "Get Set for A Career in Interior Design"	Job responsibilities of an interior decorator are clearly defined. Interior decorators are hired by a variety of businesses. Interior designers require specific skills and training. Color schemes for rooms should be coordinated. The illusion of a room can be changed by the proper use of color in a decorating scheme. The activities conducted in a specific room determine the kind and placement of furniture. Decorating a room attractively need not be expensive.

INDUSTRIAL ARTS

7 - 8 - 9

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
WOODWORKING	
Wood Structure and Growth * pp. 53-55 Time 5%	The particular growth patterns and grain structure of wood determine where and how it is used and how it is fabricated into useful products. Lumbering and the preparation of wood for use are facets of the woodworking industry.
Layout and Testing * p. 7 p. 9 Time 5%	Layout of shapes and sizes of wood pieces is made directly on the lumber being used. Throughout the process of fabricating wooden products, tests for squareness and size are made to insure proper fit for assembly.
Hand Tool Bench Work * pp. 7, 8 pp. 9-13 Time 30%	A considerable part of the production of wood projects requires the use of traditional woodworking hand tools and power portable tools. Skill in hand and portable power tool operation is essential to proper completion of wood projects.
Machine Tool Use ** pp. 15-19, 45-60, 89-98 Time 20%	The use of machine tools such as the scroll saw or drill press is needed for completion of most wood products. Specialized machines such as the wood turning lathe produce specialized shapes required in wood production.

* WOODWORKING - GRADES 7, 8, 9
CUR. BUL. 1965-66 NO. 14

** INDUSTRIAL ARTS WOODWORKING
SECONDARY SCHOOLS FIRST YEAR
CUR. BUL. 1963-64 NO. 10

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
Construction of Joints * pp. 7, 8 pp. 14, 93-95 Time 20%	The assembly of parts of a wooden product requires various wood joints. Joinery involves the construction of particular joints for particular uses such as dovetail joints for drawer fronts or mortise and tenon joints for table legs. Simple joints are made with glue and nails or screws.
Wood Finishing * pp. 8, 9 pp. 14, 95 Time 10%	Most woods require finishing as a protection and for esthetic purposes in wood products. Natural finishes involve the use of stains, fillers, and coatings such as varnish or shellac. Finishes such as oil based or latex paints cover the natural grain of wood.
Tool Sharpening and Maintenance of Tools * p. 8 pp. 15 Time 10%	Since woodworking requires razor-sharp edged tools, frequent sharpening and honing are needed. The use of grinders, oil stones, slip stones, and honing techniques keeps edge tools sharp.

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
GRAPHIC ARTS	
Hand Composition and Presswork * pp. 5-17 pp. 50-58 Time 20%	Hand composition is the orderly assembly of type and cuts for the printed page. The tools and equipment of composition include hand type, composing stick, leads, slugs, reglets, and the printer's galley. Hand and power platen presses use a metal chase to hold the locked-up type during the printing process.
Offset Preparation and Printing	Offset printing is a process developed from lithography, using the principle that oil and water do not mix. The printing plate is made from a "paste-up" of different elements. Elements may include hot and cold type composition, photos and half tones, drawings and decorations. The offset press operates with a positive plate, offsets the printing to a blanket and then in turn to the printed page.
Bookbinding * pp. 18-25 pp. 83-93 Time 15%	The binding of printed pages can be done by signature, spiral binding, stapling, or glueing. Covers may be made of cardboard and cloth or heavy weight paper.
Picture Reproduction * pp. 24-42 pp. 73-75, 94-96 Time 20%	The production of pictures may be made by dry-point engraving, linoleum block printing, and/or silk screen printing. Each method meets a particular need and produces a definite style of printing.

* GRAPHIC ARTS 7, 8 & 9
** GRAPHIC ARTS FOR SECONDARY SCHOOLS
*** PASTE MAKE-UP A TEACHING GUIDE

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
Photography ** pp. 59-64 Time 10%	Photography is the process of reproduction of images by exposing light sensitive materials to light. Pictures are "printed" from negatives.
Rubber Stamps ** p. 94	Rubber stamps are made in a two step process involving molding board and the vulcanization of the rubber type.

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
ELECTRICITY/ELECTRONICS	
Electron Theory * pp. 66-67 Time 5%	Electricity is based on the theory that electrical current is the movement of electrons. The units used to measure electricity are the ampere, the volt, and the ohm.
Conductors and Insulators * pp. 69-70 Time 5%	Electrons can be made to do various things according to the material through which they pass. Conductors and insulators have different characteristics and uses.
Electrical Circuits * pp. 80-87 Time 15%	Symbols and schematics are used universally in electrical circuitry. The essential parts of any circuit, when properly connected, form the path for the flow of electricity.
Sources of Electricity * pp. 104-109 Time 5%	Generators are the major source of electricity; however, other sources for electricity can be obtained from chemicals, light, heat, pressure on a crystal, and by the action of living organisms.
Magnetism and its Application pp. 112-119 Time 15%	The basic principles of magnetism provide the fundamentals for the generator which is the primary source for electricity. The transformer and motor operate on the principle of magnetic attraction and repulsion.

* ELECTRICITY/ELECTRONICS FOR INTERMEDIATE & J.H.S.
** SCHOOL SHOP SAFETY MANUAL

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CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
Testing and Measuring Electricity * pp. 132-138 Time 10%	Many electrical testing instruments are designed for specific applications while others such as the multimeter are multi-purpose. Electronic test instruments such as the oscilloscope and tube tester are highly sophisticated tools designed to trace an electrical signal.
Electricity in the Home * pp. 140-147 pp. 8, 9 Time 15%	The principles of electrical safety must be practiced in order to avoid the hazards of home accidents involving electric shock. The best safety to follow is to avoid contacting "live" electrical wires, terminals and connections. Protective devices are designed to open the circuit in the event of over current. Electrical codes and regulations are necessary to provide for the safety of persons and property. Electricity enters the home through the service entrance, is metered at the kilowatt - hour meter, is distributed throughout the house through the distribution center to general purpose circuits, appliance circuits, and individual circuits.
Electronics * pp. 156-164 Time 15%	The vacuum tube and transistor provide the basic components for radio transmission. Radio reception occurs when the tuner receives the radio waves through the antenna. The speakers then convert the electrical signal into a sound wave.
Communications Activity Center Time 5%	The Communications Activity Center is designed to use the short wave radio equipment in the school to promote and develop amateur radio enthusiasts.

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
CERAMICS	
Sources of Clay * pp. 86-88 Time 5%	Different types of clay are used to make a variety of ceramic products. Clay is found locally and in all parts of the world.
Hand Building Methods and Sculpture * pp. 42-47, 50-55 Time 30%	Hand building methods in ceramics include the construction of projects using pinch, slab, and coil activities. Sculpture work may include hollow core or solid pieces and may use appendages to shape animals and other creative forms.
Molds and Casting pp. 58-69 Time 15%	Ceramic products can be produced in quantity by using molds. Molds are made from plaster of paris and may be designed as one, two, three or more pieces. Liquid clay or slip is poured into molds.
Decoration and Glazes * pp. 76-85, pp. 46-49 pp. 88-99 Time 15%	Glazes are used to protect and decorate ceramic objects. Different chemicals and oxides are used in preparing glazes. Glazes may be applied by brush, painting, dipping, and spraying.
Potters Wheel * pp. 70-75 Time 10%	The potter's wheel is used to build projects by moving a ball of clay on a turning wheel; objects produced are hollow and curve shaped. Attachments used in conjunction with the potter's wheel for mass production activities are jiggering and jollying.

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* CERAMICS FOR SECONDARY SCHOOLS
** INDUSTRIAL CERAMICS C-B #5 1970-71

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
Kiln and Firing * pp. 38-41 Time 5%	A kiln is used to fire clay to a specific temperature, making it hard and durable.
Industrial Ceramics Practices ** pp. 99-109 Time 5%	Industrial processes are used to produce ceramic articles in quantity. Machines used are the ball and pug mill; press, glass sagger, and gang molds; jiggering and jollying attachments; and silk screen applique.

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
METALWORKING	
Bench Work * pp. 34-40, pp. 65-67 Time 20%	The fundamental skills and knowledges in the use of basic handtools are used to fashion ferrous and non-ferrous metals into useful products. The safe and effective use of these tools and shop equipment will have application to other metalworking areas.
Machine Operations * pp. 41-43, pp. 77-96	The use of power machines in construction and fabrication provides opportunities to make more challenging projects. The machine can be used as an aspect of mass production techniques.
Sheet Metal * pp. 44-50, 97-114 Time 20%	Sheet metal work requires the working knowledge of mathematics in the design, layout and fabrication of related projects. Special joints requiring folding, riveting and or soldering are employed in this area.
Art Metal * pp. 50-64, pp. 115-134 Time 20%	Art metal and jewelry are designed and made of non-ferrous metals and include techniques in copper enameling, lapidary and reprose. The additional skills required in this area include working with copper, aluminum, german silver and semi precious stones.
Ornamental Metal * pp. 61-63, pp. 147-161 Time 10%	The skills in scrolling, bending, riveting, planishing and peening of wrought iron are inherent in this area. Early American (colonial) craftsman fashioned their household articles with these materials and with these techniques.

* INDUSTRIAL ARTS METALWORKING SECONDARY SCHOOLS

CONTENT AREA AND TOPICS

Cast Metal
* pp. 59-60, pp. 135-146
Time 5%

SKILLS AND KNOWLEDGE

The process of pouring molten metals into sand or metal molds has many practical applications in the school shop and in modern industry.

Special consideration is given to personal safety in the handling of molten metals.

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
DRAFTING	
Drafting As A Language * pp. 1-8, pp. 12 Time 10%	Mechanical drawings provide a method of transmitting ideas, designs, methods of construction and other information which cannot be satisfactorily transmitted by the written or spoken word. The language of drafting is universal almost to the extend that mathematics is a world-wide language.
Types of Mechanical Drawings * pp. 44, 45, 48, 49 50, 51, 62, 63, 66, 67 Time 60%	The three basic types of mechanical drawings are orthographic projections, isometric projections, cabinet drawings. Each is suited to different purposes, and sometimes two types may be required on complex drawings. Some drawings are not merely for the transmittal of information but are the only means of determini construction techniques, sizes or shapes. One example of this is the development of sheet metal patterns.
Lettering and Symbols * pp. 18, 19, 30, 31, 70, 71 Time 20%	Lettering is an integral part of drafting techniques. Proper labeling and dimensioning of drawings are essential to the completeness of the information recorded in the drawing. Standard symbols and signs are used as short cuts for understanding and simplification of drawings. Many symbols and signs are universally used by draftsmen, as part of the drafting language.
Drawing Reproductions * p. 72 Time 10%	Mechanical drawings are reproduced by tracings and blue or white prints, and by many photographic and xerographic processes. Computers can be programmed to reproduce drawings, even changing viewing angles, at the will of the operators, on paper or on screens.

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* DRAFTING EXPERIENCES FOR INTERMEDIATE SCHOOL PUPILS CUR. BUL. 1966-67 NO. 9

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
GENERAL CRAFTS	
Mechanical Drafting * pp. 3-9 Time 10%	The development of layout, measurement and design capabilities is developed through mechanical drafting. The use of drafting materials and equipment are the means whereby creative and mechanical concepts are put in final working form.
Art Metal * pp. 10-21 Time 10%	A variety of processes are used to shape and decorate metals as art forms and include enameling, cloisonne, repousse and polishing.
Plastics * pp. 45-48 Time 10%	Plastics is a material that can be shaped and formed to the specific needs of industry with ease. The processes of forming, shaping, bonding and decorating plastics are introduced as they relate to project construction.
Aerospace ** pp. 1-100 Time 10%	The fundamental concepts of aerospace technology are inherent in model spacecraft. The construction of flying model airplanes demonstrates the principles of flight and the special construction precautions necessary for building safe aircraft.
Ceramics * pp. 25-33 Time 10%	A variety of processes are used to shape and decorate clay and include mosaic tile and relief work, incising, sgraffito, and glazing.
Leatherwork * pp. 34-45 Time 10%	Animal hides are transformed into leather which are used for making articles of clothing and accessories. Leather work processes include material preparation, carving, stamping, finishing, and fastening.

* INDUSTRIAL CRAFTS 6th GRADE
** INDUSTRIAL ARTS AEROSPACE
*** TEACHERS HANDBOOK FOR THE HANDICAPPED

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
Marine Technology * pp. 78-81 Time 10%	Maritime activities are a major industrial endeavor in the New York City area. Marine technology supports this endeavor with instruction in the mechanics of boat building, marine hull maintenance and repair, and the operation of small engines.
Mass Production *** p. 272 Time 15%	The growth and development of industry is dependent upon mass production. The techniques of mass production involve product design, advertising, packaging, and merchandise distribution.

INDUSTRIAL ARTS - GRADES 7 - 8 - 9

CONTENT AREA AND TOPICS	SKILLS AND KNOWLEDGE
PLASTICS	
Orientation to Plastics Technology * pp. 70-90 Time 5%	The study of plastics technology involves the history and growth of the plastics industry and an analysis of the types of plastics used in a variety of consumer products.
Molding and Forming of Thermoplastics * pp. 26-39 Time 30%	The molding and forming of thermoplastics is introduced through the processes of injection and pressure molding, extruding, vacuum forming, strip heat shaping, and encapsulating with plastic resins.
Plastics Bonding Process ** pp. 254-267 Time 25%	The bonding of several plastic parts is an integral function of plastics product production. This is accomplished through the processes of cohesive and adhesive cementing, heat sealing, laminating, fibre glass molding, and hot air welding.
Vinyl Dispersion pp. 247-251 Time 10%	The action of heat and centrifugal force on colored vinyl powders placed in rotational molding-oven molds produces many types of hollow and intricately shaped objects. These may be bottles, cases, irregularly shaped life forms, and useful dispensers which are seamless and require no further fabrication.
Plastics Decoration * pp. 42-44 Time 15%	Surfaces of plastics can be altered for useful and decorative purposes. Directional signs, name tags, identification plates, and polished jewelry items can be produced in quantity by engraving, hot stamping and design applique.

* PLASTICS FOR SECONDARY SCHOOLS
** TEACHERS HANDBOOK FOR THE HANDICAPPED

TYPEWRITING

7 - 8 - 9

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CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
BASIC TECHNIQUES *pp: A4-A5	Proper typing posture. The back is straight; feet are flat on the floor with one foot slightly ahead of the other; the body is a handspan from the machine, centered in front of the j key. Returning to home keys. At the beginning stages of skill acquisition, all fingers return immediately to home keys, asdf jkl;. Correct stroking. The fingers strike the keys in a ballistic motion; the appropriate finger darts forth, strikes the key and is quickly withdrawn and is readied for the next stroke. Using space bar. The right thumb hovers over the space bar. It strikes the space bar quickly. A slow motion will cause the typewriter to skip more than one space. Returning the carriage. On manual machines the f, d, and s fingers are placed against the carriage return lever. A quick toss of the wrist action is used to return the carriage to the margin. On electric machines the right little finger is extended to tap the return key. Changing paper. The paper bail is raised, the paper placed against the paper guide and the paper is quickly rolled into the machine. The paper release may then be disengaged to allow for the paper to be straightened. It is then re-engaged and the paper bail is placed on the paper with the rollers dividing the paper approximately into thirds.
BASIC MACHINE PARTS *pp: A5-A6	Paper table and guide. The paper table is used for resting the paper as it is readied for insertion into the typewriter. The paper guide is set at a number suggested by the textbook being used by the class. Paper release. Removal of paper from the machine and the straightening of the paper after insertion, requires use of the paper release. Never should the paper be rolled out of the machine. Carriage return. This device is employed for returning the machine to the margin while advancing the platen. Students should be discourged from using the platen knobs for this purpose.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
BASIC MACHINE PARTS *pp: A5-A6	Space bar. The space bar may be either single or dual level. On those machines equipped with a dual level action space bar, depressing it to the second level will cause the spacing action to repeat until the space bar is released. Paper bail. This is used to hold the paper in place and as a guide in proofreading. Most paper guides are ruled with space markings. Tabulator. The tabulator key or bar is used for indenting paragraphs and advancing the carriage or typing element to predetermined carriage or carrier settings. Use of the tabulator mechanism should be postponed until it can be taught in context. Backspace key. This key is used for spacing the typewriter in a rightward direction. It is employed for striking over in rough draft work, constructing special symbols not on the typewriter, backspace calculation of center points, and pivoting. Shift key and lock. The shift keys are operated with the little fingers. To obtain the uppercase of any of the keys on the right side of the keyboard, the left shift key is used; the right shift key is used for uppercase characters on the left side of the keyboard. The shift lock is employed for typing successive uppercase characters. It is released by depressing either of the shift keys. Line-space regulator. The line-space regulator is used to control the space between lines of typing. On some machines the line-space regulator may be set for one-and-a-half spacing. Margin stops. The margin stops are used to stop the machine at predetermined settings.
KEYBOARD MASTERY *pp: A6-A8	Alphabetic keys. Through specially constructed copy in the elementary skill acquisition stage along with paced practice, the student is guided through progressively higher levels of skill attainment. The teacher stresses process of correct stroking dynamics rather than

TYPEWRITING - KEYBOARD MASTERY AND SKILL DEVELOPMENT - GRADES 6-9

CONTENT AREA AND TOPIC

SKILLS AND KNOWLEDGE

KEYBOARD MASTERY

*pp: A6-A8

correct typescript. The order of priorities in teaching the alphabetic keyboard are first, technique; second, speed, and last accuracy of product.

Shift keys. Through direct observation the teacher will determine whether or not students are shifting correctly.

Punctuation marks. Through observation of the student's typescript, the teacher will determine whether or not the student is applying acceptable typing style to the typing of punctuation marks.

Number keys. Although the number keys are important, and are becoming increasingly so, time constraints in the middle school typing program prohibit skill acquisition on the numeric keyboard to the mastery level. These keys are taught for acquaintanceship skill. The training may serve as a basis for skill development at the mastery level later in the typewriting program.

Symbol keys. Develop mastery level skill only on high frequency symbol keys such as the dollar sign, parenthesis, and the hyphen. The less frequently used symbols should be taught for acquaintanceship.

SKILL DEVELOPMENT

*pp: A9-A11

Speed of at least 15 words per minute. Fifteen words per minute is the speed requirement for Level I of the New York State Typewriting Syllabus. It is assumed that the student will progress at least to Module II, which requires for completion a minimum sustained speed of 20 words per minute for three minutes. Attainment of speeds below 20 words per minute at the end of the course are not desirable since it is generally agreed that the skill at these lower speeds is not automatized.

Efficient speed development requires goal setting by the teacher and student and teacher supervised, paced practice. Speed is efficiently developed through a systematic approach that includes such speed building approaches as the pre-test, drill, post-test sequence with the inclusion of spurt drills as part of the drill cycle.

Accuracy. This is the last factor to consider in the keyboard teaching phase. As with speed development, the same procedures should be employed,--goal setting, pre-test, drill, post-test.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SKILL DEVELOPMENT *pp: A9-A11	The teacher should direct the student to strive for speed and accuracy separately, and grade each separately. Error detection and correction. A flawless typescript produced within a minimum amount of time is the hallmark of an expert typist. To attain this, fuse together the separate skills of rapid and accurate keystroking, arranging type on paper, and detecting and correcting errors. Drill must be provided in correcting errors.
HORIZONTAL CENTERING	One word with an even number of characters. One word with an odd number of characters. Two or more words. All caps. All caps with hyphenated word(s). Spread words and lines. The teaching of centering is developmental. Start with one word with an even number of characters and graduate to spread words and lines. Horizontal centering may be taught by either the backspace method or arithmetic method. For simple horizontal centering problems, the backspace method is the more efficient. Horizontal centering will serve as a foundation for solving tabulation problems.
VERTICAL CENTERING *pp: B4-B6	Vertical lines per inch. Six vertical lines constitute one inch. Lines per page or half page. There are sixty-six lines to an eleven inch sheet of paper and thirty-three lines to a five-and-a-half inch sheet. Counting lines of copy. Provide practice in counting typed and blank typewriter lines. Centering of several lines. Count the number of typed and blank lines. Subtract this number from the total number of available lines on the paper. Divide the results by two. The answer is the number of blank lines that should be allowed for top and bottom margins. Block centering. Determine the longest line. Base horizontal margin calculations on the length of this line. To determine the vertical starting point use the method described above for centering of several lines.

TYPEWRITING - KEYBOARD MASTERY AND SKILL DEVELOPMENT - GRADES 6-9

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
SIMPLE ENUMERATIONS *p. B6	Typing of enumeration with: Arabic numbers less than 10. Arabic numbers more than 10. Capital lettered items. Roman numerals. The key point to teach is the alignment of period in the enumeration letters and or numbers.
TYPING ON RULED LINES *p. C11	Variable line spacer. The variable line spacer is used for resetting the writing line. Ratchet release. This part is also used to reposition the writing line, but unlike the variable line spacer, it allows the typist to easily return to the original line of writing. One use of the variable line spacer would be for typing exponents. Centering items on ruled lines. This skill is particularly useful in forms typing.
PERSONAL - BUSINESS LETTERS *pp: C12-C13	**Letter parts:** Dateline. The dateline may be typed at the left margin, immediately to the right of the center point or pivoted from the right-hand margin. There are usually six lines between the date line and the inside address, but this may be varied to give a well-balanced appearance to the letter. Inside address. The inside address must always be typed at the left margin. It is usually typed six lines below the dateline. Salutation. The salutation must always be typed at the left margin. Body. The body of a letter is usually divided into at least three paragraphs. Complimentary close. The complimentary close may be typed at the left margin, immediately to the right of the center point, or pivoted from the right-hand margin. Enclosure notation. The enclosure notation is always typed at the left-hand margin. Dictator's initials. If the name of the originator is typed, the originator's initials should not appear as a notation along with the typists intials.

CONTENT AREA AND TOPIC	SKILLS AND KNOWLEDGE
PERSONAL - BUSINESS LETTERS *pp: C12-C13	Typists initials. The typist's initials should only be included if the letter is not typed by the originator. Typing of envelopes. Give students practice in typing various sized envelopes. Include practice in typing the return address.
COMPOSING AT THE TYPEWRITING	Lists, sentences, paragraphs, and reports. Composing at the typewriter is a skill that must be learned. Begin by having students provide one-word reponses and gradually advance to the composing of reports at the typewriter. Composing at the typewriter must not be started until the pupil has automatized his typing skill to between twenty and thirty words per minute.

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*TYPEWRITING SYLLABUS, 1976 REVISION, PART II MODULES, The University of the State of New York, The State Education Department